

# **URBAN DEVELOPMENT IN SAUDI ARABIA**

**Challenges and Opportunities**

**Edited by:  
Saleh Al-Hathloul and Narayanan Edadan**

**Dar Al Sahan**

**URBAN  
DEVELOPMENT  
IN  
SAUDI ARABIA**

**Challenges and Opportunities**

**Saleh Al Hathloul *and*  
Narayanan Edadan**

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Riyadh*



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# Introduction And Overview

Saleh Al Hathloul and Narayanan Edadan

*We live in a moment in history where change is so speeded up that we begin to see the present only when it is already disappearing.*

(Laing, 1969)

The urbanization and urban development processes experienced by the Kingdom of Saudi Arabia are unique in many ways as compared to other developing countries. Unlike many developing countries, which were under the colonial rule and have experienced political instability and paucity of investable funds, the development process in the Kingdom is guided by a stable government which has the political will and economic resources to transform a subsistence economy to a modern urban economy at an impressive rate. As a result, Saudi Arabia has shortened its development period to an enviable level. The balanced development approach followed by the Government during the last two decades has successfully encouraged the System for choosing the planning and development practices that are suitable to its social environment. However, continuous enhancement of technical and coordination capabilities of national and local planning and development institutions are necessary to manage the urban opportunities and challenges and to fully realize the social objectives of urbanization and modernization processes.

The rate of urbanization and the growth rate of urban needs of Saudi Arabia are exceptional in many respects. The exponential growth of urban population experienced by the Kingdom during the last 2 decades has exerted immense pressures on the economic and institutional capabilities of the System. However, the farsighted policies and programmes followed by the Government have been very successful to avoid the structural development problems experienced by many other developing countries during their rural-to-urban transition processes. However, the past development experiences indicate that it is necessary to evaluate the urban development strategies and tools followed in the Kingdom. A review of urban planning experiences in this country reveals that while these tools have successfully solved many of the supply side aspects of urban growth, the development challenges emerging from the changing demand pattern require a re-thinking of the prevailing urban development strategies.

## ***Introduction and Overview***

In search of a quick fix solution to the urban problems, Local Governments in the Kingdom have taken a narrow view of urbanization, focusing on more visible projects in the urban areas. Besides, the centralized type of resource mobilization and expenditure systems encouraged the incremental, project based development planning approach, based on short-run perspectives of urban needs. It is interesting to note that the low population density and the large distance between the settlements in Saudi Arabia render many of the conventional spatial planning approaches and tools inadequate. The strong influence of traditional values, the in-built tolerance of the State to the popular needs, the eagerness to satisfy the modern material needs of the Saudi society, the "incremental development approach" followed by the government, etc., have sharpened the ineffectiveness of the standard urban development approach for the country.

Saudi planning experiences are very rich in many respects. The State has encouraged urban plan making even before the beginning of the planned development phase in 1970. During the 1980s the Ministry of Municipal and Rural Affairs has prepared a National Spatial Strategy, Urban Growth Limit Strategies, Regional Plans for all Provinces and Regions. Majority of the cities have Master Plans and large number of Action Area Plans. However, the plan implementation record is not satisfactory. In spite of the availability of development plans and strategies, cities in the country continue to grow unstructured and generate many physical and economic problems.

The inadequacy of the existing urban development paradigm is more explicit in the context of future needs of the Saudi society, (see, Chapter 14). Our concerns on the inadequacy of the current urban planning practices and institutional capabilities to manage the current and emerging urban challenges and development opportunities are the geneses of this book. Our efforts in urban development should be guided by the ground realities discussed in the various chapters of this book.

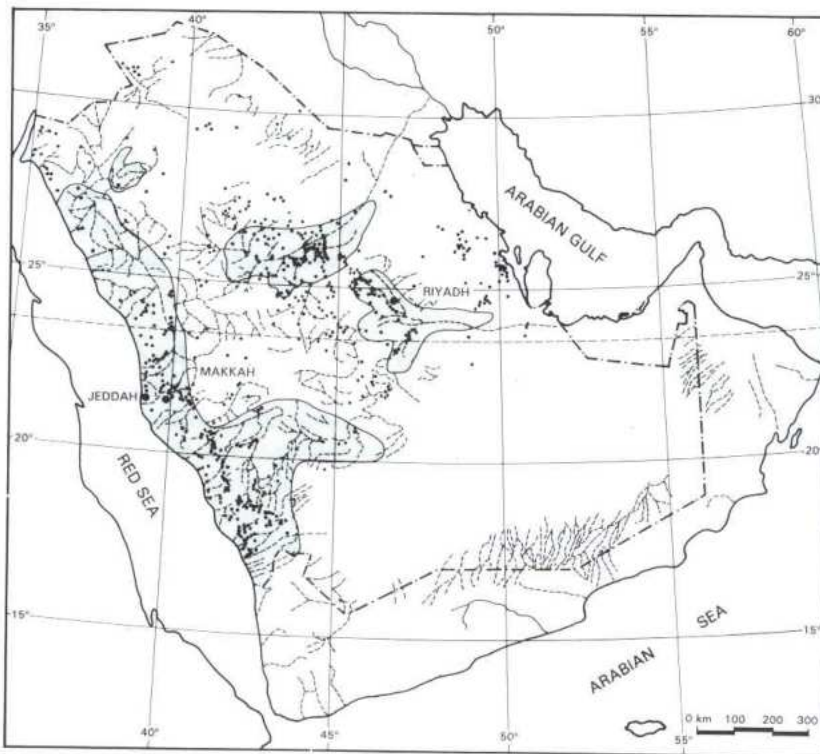
## **An Overview Of Saudi Settlement Pattern**

### **Geographical Context**

Lying between 16' and 32'S and 35' and 55' N with an area of 2.25 million sq.km. Saudi Arabia has one of the lowest population densities in the Middle East. With the present national population of 16.9 million (Central Department of Statistics, 1993) the gross density of the country is only about 7 to 8 persons per sq.km. The natural setting of the country could be divided into 6 geographical regions. The Rub Al Khali and other deserts in the Central and Northern Regions take up

50% of the geographical area. The Central plateau covers 32%, Hijaz and Asir mountains 7%, Tihama and the Western coastal plain 2%, the Eastern low lands 5%, the Northern plain and Al-Jouf region 4% of the total geographical area.

The great sand deserts of Rub Al Khali, Nafud and Dahna influenced the location and linkage pattern of early settlements in the Najd and Northern regions of the country. Hostile *sabkha* areas along the coastal regions, particularly along the Eastern Region, limit the scope for agricultural communities. As a result, the early settlement pattern and population distribution were confined to the Hijaz, Asir mountains, Tihama and Western coastal plains as well as along the watershed areas in the West and Central Arabia (Fig.1). Not surprisingly, the present settlement pattern and even the structures and forms of many cities are influenced by these geographical characteristics.



*Figure 1: Watershed Areas and Distribution of Settlements*  
Source: *Al-Hathloul and Edadan, 1993*



## *Introduction and Overview*

### **Evolution Of Settlement Pattern**

Historically, the pre-Islamic trade routes and pilgrim routes prevailed during the Islamic period, along the south-north and east-west axes of the country, and the intermittent Oases were the basis of early settlements. The "Classical trade route" (William, 1979) and the "Coffee route" (Al Ansary, 1983) used for trading spices, incenses and coffee passed through the Hijaz and Central Arabia to Northern Arabia.

The origin and growth of most of the existing cities were influenced by those routes and the large caravans used for travel generated significant amount of activities to sustain sizable number of settled population in those centres (Dequin, 1976). With the rise of Islam, pilgrims from all over the Arabian peninsula, North and Eastern Africa and Asia visited Makkah. The various routes taken by earlier pilgrims became the main corridors of settlement growth during the Islamic period and after the national unification.

However, unlike the post-national unification period, settlement distribution and growth during the early period were governed by the sustaining capacity of the settlements and settlements grew in an organic manner. As a result, settlement pattern was more balanced in size and distribution during the early period, even though their locations were confined to the coastal and watershed areas of the country and their social and economic structures were highly influenced by their tribal systems (Al Hathloul and Edadan, 1993).

Planned settlement development strategy followed during the early period of nation building, known as the sedentarization and re-habitation of nomadic population, the discovery of oil in the 1940s and the resulting establishments of oil towns as well as strategic towns built for the defense purpose and the evolution of a modern transportation and communication network have subsequently altered the settlement pattern in the country. Settlement pattern in the country subsequently became more primate during the last 20 years of planned development period, in spite of regional development strategies followed by the Kingdom since the early 1980s which were aimed to encourage an orderly settlement distribution and a system of multi-polar system of cities (Al-Hathloul and Edadan, 1992a). One of the main objectives of the proposed national urban policy, therefore, is to correct these spatial development distortions.

### **Urbanization And Settlement Growth**

The process of urbanization in the country began only with the commercial

production of oil in the late 1930s. Although, a large number of existing settlements, originated along the old trade and pilgrim routes and around the old Oases, were prominent before 1930s (National unification period), their growth and influence on their hinterlands were limited due to their poor economic base. It was with the commercial production of oil, establishment of oil towns and the related functional restructuring of urban centres along the Eastern and Western Coasts that the urbanization process became vibrant in the country. During this period many new towns were built; both industrial (towns along the Northern Trans-Arabian Pipe line (TAPLINE) and strategic military towns) (Al-Hathloul and Rahman, 1989). Many dormant towns and fishing villages along these coasts became centres of commerce and trade. As a result, the level of urbanization increased about 14 to 15 times between 1950 and 1990.

Saudi Arabia is one of the highly urbanized countries in the world at present. The level of urbanization has increased from as low as 10% to 15% in 1950 (Barth and Quiel, 1986) to 77% in 1992 (Central Department of Statistics, 1993). This rapid rate of urbanization is the result of many factors: increased economic affluence, demographic imperatives such as; increase in the natural growth of Saudi population and poor supply of Saudi labour force, government commitment to develop social and economic infrastructures of the country at a rapid rate, high demand for skilled and semi-skilled labour in the urban areas and the resulting in-migration of internal and foreign population, improved mobility, rapid rate of rural to urban social transformation of the Saudi society, etc. (Al Hathloul and Edadan, 1991).

According to the 1992 National Population Census, the total population of the Kingdom is 16.93 million, comprising of 72.7% of Saudis and 26.3% non-Saudis. About 77.2% of the total population live in settlements with more than 2400 population and 31.50% of the population in these centres are non-Saudis.

### **Regional Distribution Of Urban Settlements**

Saudi Arabia is divided into 5 provinces and 14 administrative regions<sup>[1]</sup> (*Emirate*), each headed by a Governor/Amir who is the regional representative of the Ministry of Interior. Based on the level of urbanization indicator,<sup>[2]</sup> the Western Province is the most urbanized province in the country, followed by the Central Province (Table 1). However, the Eastern Province, which has the highest percentage of newly emerging urban centres, has experienced one of the highest growth rates in urban population during the last few years. Increase in the urban population share of the matured regions and decrease in the share of newly emerging regions (Northern) indicates an increasing trend in urban primacy in the country.

Table I  
Distribution of Urban Population (Settlements above 2400 population) in 1992

# Province	Settle- -ments	Percent of Settlements	Percent of Saudis	Total Urban Population	% Urbanization	% of Municipal Population, 1987
I Western	62	18.08%	60.19%	4,688,592	35.87%	42.1%
II Central	85	24.78%	69.17%	3,994,798	30.56%	28.7%
III Eastern	73	21.28%	74.03%	2,326,502	17.80%	15.1%
IV Southern	72	20.99%	76.33%	975,769	7.47%	6.5%
V Northern	38	11.08%	83.03%	1,041,558	7.97%	7.6%
Undefined[1]	13	3.79%	82.22%	42,696	0.33%	-
Total	343	100.00%	68.50%	13,069,915	100.00%	100.00%

Source: (1) Central Department of Statistics (1993). "Preliminary Estimates from 1992 Population Census," Riyadh.  
(2) MOMRA, "The Urban Boundary Studies," 1989.

Note: [1] Settlements which could not be classified into Provinces/Regions at this stage.

The Country has 101 municipalities and 43 village cluster centres (VCCs) and 10,365 villages and *hijar*. The distribution of urban centres as given in Table 2 indicates that 25.8% of the urban centres are located in the Central Province accommodating 31% of the urban population. The Southern and Northern Provinces have low shares of the national population. These two Provinces having 33% of the urban centres share only 12% of the national urban population. The extent of urban primacy is evident from the Table: 2. While 2 primate cities with more than 1 million population share 37.02% of the total urban population, 67% of the urban centres which have population less than 10,000 share only 7.7% of the total urban population.

One of the important aspects of urban settlement pattern in the country is the polarized nature of population distribution in three main urban centres; Riyadh (Central Province), Jeddah and Makkah (Western Province). In 1992 about 45% of the national urban population were living in these centres. These centres also shared a larger percentage of settlement functions. Another emerging urban agglomeration in the country is the Dammam Metropolitan Corridor in the Eastern Province, comprising of Dammam, Al Khobar and Dhahran settlements in the Center, Jubail in the North and Al-Hassa in the South of the Corridor.

These centres in the Eastern Province, Riyadh in the Central Province and Jeddah and Makkah in the Western Province form an urban triad of great economic and political importance. These centres share as much as 80 to 85% of industrial establishments in the country and contribute more than three-fourth of the total national urban employment. These centres are the primate settlements in the country. Central Province is relatively more polarized than other provinces in the country. However, present development trends and strategies indicate that the country is set to reinforce a multi-polar settlement pattern.

## **Urban Challenges And Opportunities**

Saudi urban growth model is unique in the world. Although other nations in which urban growth rates rival or exceed those in Saudi Arabia may be identified, the increase in Saudi urban population was little short of breathtaking (see, Frisbie, chapter 1 in this book). But the main feature of Saudi experience is that unlike other countries, the connection between urbanization and economic development in Saudi Arabia did not involve either substantial burdens placed on rural sector or changes in the structure of employment opportunities of rural-to-urban migrants. Thus the gloomy prospect looming for cities in many developing nations described



Table 2  
Regional Distribution of Settlements by Population Size, 1992

#	Regions	500001-1M		100001-500000		50001-100000		10001-25000		5001-10000		2400-5000		Total No. of Settlements	%	% of Population
		1M+	500001-1M	100001-500000	50001-100000	10001-25000	5001-10000	2400-5000	2400-5000							
1	Makkah	1	1	1	1	1	9	7	15	36	10.91%	29.02%				
2	Madinah		1	1	1	3	5	5	16	16	4.85%	6.35%				
3	Al-Baha					2	3	5	10	2	3.03%	5.00%				
<b>I</b>	<b>Western Province</b>	1	2	1	2	2	14	15	25	62	18.79%	35.87%				
4	Riyadh	1		1	5	12	13	29	61	18.48%	26.28%					
5	Qassim			1	2	5	2	14	24	7.27%	4.09%					
<b>II</b>	<b>Central Province</b>	1		2	5	17	15	43	85	25.76%	30.56%					
6	Eastern Region			6	5	11	22	24	73	22.12%	17.80%					
<b>III</b>	<b>Eastern Province</b>			6	5	11	22	24	73	22.12%	17.80%					
7	Najran			1	1	2	2	5	9	2.73%	1.18%					
8	Asir			2	1	5	4	11	23	6.97%	3.93%					
9	Jizan			1	2	3	8	26	40	12.12%	2.36%					
<b>IV</b>	<b>Southern Province</b>			2	2	4	8	14	42	21.82%	6.15%					
10	Hail			1	1	1	1	8	10	3.03%	1.62%					
11	Northern Border			1	2	1	1	3	8	2.42%	1.55%					
12	Tabuk			1	1	4	2	2	8	2.42%	3.02%					
13	Al-Jouf				1	3	2	1	7	2.12%	1.07%					
14	Qurrayat			3	2	3	8	5	38	11.52%	6.00%					
<b>V</b>	<b>Northern Province</b>			2	2	3	8	5	17	11.52%	6.00%					
Total		2	2	14	13	19	58	71	151	330	100.00%	100.00%				
		0.61%	0.61%	4.24%	3.94%	5.76%	17.58%	21.52%	45.76%	100.00%						
% of Population		37.02%	12.08%	23.46%	7.55%	5.18%	7.03%	3.72%	3.95%	100.00%						

Source: Central Department of Statistics (1993), "Preliminary Estimates from 1992 Population Census," Riyadh.

by Davis (1969) as "Development without prosperity, urbanization without opulence, without sophistication, without urbanity.." doesn't pertain to this country.

However, the tremendous achievements of Saudi urbanization, particularly at the social and economic dimensions, do not mean that there are no problems. One of the main challenges of the rapid rate of urban growth is the non-compatibility in the growth of various urban structures. There has been tremendous lags between economic, social, institutional and physical dimensions of settlement growth in the country.

Rapid urban growth has resulted in unbelievable urban sprawl of cities, both large and small, beyond the resource and management capabilities of local bodies. Lack of horizontal coordination, both at the central and local levels, has institutionalized the incremental growth process of cities. One of the main outcomes of this growth is the institutional lags in managing city growth. Socio-cultural institutional considerations still rule over the comprehensiveness of city development.

Urban development challenges such as: large percentage of vacant developed urban land, co-existing with the non-availability of services and utilities to the built areas, increasing demand of urban land subdivision for speculative purposes, operational challenges to the urban in-fill strategy, decaying downtowns, regional disparity in development and absence of a spatially differentiated investment policy, coordination problems of social and physical infrastructure planning and implementation, capacity constraints of urban facilities in the inhabited parts of cities, management of manpower and skill development, local participation in decision making processes, fiscal and financial autonomy of local bodies, internal conflicts between the modern and traditional value systems of the society, etc. are some of the main development challenges facing the Kingdom which in turn have significant impacts on city structures and forms. These challenges become more sharp and critical within a long term perspective of a rapidly increasing urban needs and the resource and institutional inability of the local bodies to meet those needs. Moreover, in the absence of proper institutional structures, urban challenges emerging from the modernization and urbanization processes are often managed with traditional instruments and decision making process. Majority of the above listed challenges could be re-shaped into development opportunities with the help of positive social and political commitments and application of appropriate development approaches. Efficient utilization of human and natural resources within a national urban policy and a sustainable urban development strategies are required to achieve a balanced urban development. Appropriate administrative and socio-economic institutional changes are required to meet these urban development goals.

## **Objectives Of The Book**

The main objective of this book is to draw the attention of decision makers and professionals to the various development opportunities and challenges faced by the Saudi cities. In many instances the planning efforts and even the priorities are imbalanced. We observe that urban problems and resource capabilities of public and private sectors should be programmed within a sustainable urban development planning strategy. The standard urban development paradigm which emphasizes incremental and supply-side development approach followed in this country is an important limitations of the present development model. It is, therefore, necessary to search for a new urban development paradigm which gives adequate emphasis to the development of local institutions, strengthens the process of asset creation and addresses the demand-side of urban growth.

Active participation of private sector, both formal and informal, formulation of a sustainable urban development strategy, decentralization of decision making process and strengthening of local institutions, increasing fiscal and financial independence of local bodies, etc., are some of the urgent urban calls in Saudi Arabia. It is timely, therefore, to re-define the nature of urban problems and issues with which urban planning is concerned and to review the main means by which we are, and have been, tackling these problems. The main purpose of this book is to enquire in these areas of plan and policy making and to initiate a search for an appropriate urban approach for Saudi cities. We are aware that the book couldn't cover all areas of urban challenges and opportunities due to so many factors. Perhaps, this itself will encourage more work in this critical subject in future.

## **Organization Of The Book**

The search for a new urban development paradigm revolves around a review of past experiences in the Saudi urban development planning processes: the institutional framework of planning, the social and economic structures, physical and non-physical resource management of the city, internal dynamics of city growth and population distribution, planning approaches and tools, levels of public and private participation and the process of plan effectuation, implementation, monitoring and feedback processes.

The nature of urban problems discussed at present in many cities in Saudi Arabia are different from the ones considered important a decade ago. On the one hand rapid rates of city growth and modernization bring new problems and on the other hand social change processes transform the social perceptions of these prob-



lems; the way people evaluate these problems and the way they tackle them. Increased economic affordability, sudden exposure and close interaction with the external, and often alien, social and economic environments also influence these perceptions. However, in many areas the means to tackle these problems remained traditional.

The book unfolds from this point. It reviews the past Saudi urban development experiences in major dimensions of urban structure, social and economic and built environment, and indicates the developmental limitations emerging from the inadequacy of the institutional structure to ensure a sustainable urban development. The elements of a desirable urban development paradigm is discussed in this context.

The book is structured in three parts. Part I discusses the urbanization and urban development processes in the country. Part II unfolds the various dimensions of structure and form of Saudi cities and Part III deals with planning mechanisms that are developed and practiced in the country.

In Chapter 1, **Parker Frisbie** reviews the Saudi urban development in a comparative perspective. Frisbie shows that while the rate of urban population increase in Saudi Arabia is quite high by world standards, Saudi Arabia appears to have escaped the excessive concentration of urban population in "mega-cities", as experienced in many developing world and thus the country has been able to avoid the problems often thought to be associated with a primate city pattern and population congestion. The Saudi growth model is unique in many aspects; it has achieved remarkable urban economic development neither displacing the rural structure nor discriminating against the rural-to-urban migrants. The Country's achievements in successfully integrating the urbanization and economic development processes are mainly attributed to the concerted urban planning efforts and nation-wide development plans carried out under the strong Central Government intervention in the development process.

In spite of the remarkable progress achieved by the strong Central Government participation, the spatial development plan making and implementation processes at the regional and local levels remain unbalanced. This is mainly due to the lack of adequate institutional capability at the regional and local levels. In Chapter 2 **Omar Mashabi** discusses these institutional aspects of planning in the country. Mashabi reviews the institutional structure of spatial planning process and observes that some of the main reasons for the inadequate performance of urban development plans are the lack of technical capability of the local bodies, absence of decentralized decision making structure and the lack of an efficient mechanism for the horizontal coordination between various functional structures of decision making.

## *Introduction and Overview*

In Chapter 3 **M A Al-Hammad** outlines the various phases of urban growth and discusses the evolution of various urban development objectives emphasized in the various Five Year Development Plans. This chapter provides a backdrop of the various urban development efforts formulated in the country.

**Abdullah Al-Khalifah** takes us to the dynamics of urban social structure in Chapter 4. One of the impacts of rapid urbanization and urban growth processes is the social stratification of people and this stratification is often reflected through distinct social areas. The structures and forms of cities are significantly influenced by these stratification processes, particularly in a transitional society similar to Saudi Arabia. The empirical analysis on the social spatial stratification of Riyadh city indicates that social segregation based on regional groups; ethnic and migration; is highly prevalent in Saudi cities, even though the urban social structure is responding more positively to the economic differentiation. An important conclusion is that social mobility and modernization process of Saudi population are still moderate, indicating diverging trends in the modernization and urbanization processes.

Creation of new industrial centres and diversification of economic base of existing urban centres are important objectives in spatial planning. The economic structure of an urban area is influenced by the effectiveness of the industrial development strategy followed by the country. Urban and regional planning experiences are rich in this respect. Spatial development strategies like the regional concentration and metropolitan de-centralization and town planning instruments like satellite towns and new towns, etc. have used varied combinations of growth pole/centre strategy. **Umar Benna and Mohammad Awad** deal with these dimensions of spatial development in Chapter 5. The content and effectiveness of the "industrial centres" strategy followed in Saudi Arabia are reviewed in this chapter and it concludes that while the strategy has been very effective for creating a multi-polar settlement pattern and promoting technological integration of space, the strategy has not shown similar success in diffusing the growth effects and encouraging technological innovation. The social assimilation of the western technology is still much to be desired.

Chapter 6 deals with one of the most critical problem areas in the country - urban land development. Lack of comprehensive and legally binding urban land development regulations at the national and local levels has significantly affected the structured growth of cities. Rapid rate of urban sprawl, increasing level of urban vacancy, both developed land and built housing and commercial units coupled with large chunk of unserviced areas within the urban mass are very common in many cities. **Walead Abulaal** discusses the urban land development process in this chapter. This chapter identifies the main actors in this process and presents a comprehensive model of land development process for the Kingdom.

The supply side orientation of the standard urban development paradigm has been very successful in Saudi cities to generate over supply of developed land and built housing units. Concerted direct public housing programme and liberal financial and non-financial supports provided to the private sector have created an unique problem of housing vacancy in this country. The housing shortage problem of the early 1970s soon became the housing surplus problem in late 1980s. In Chapter 7, **Saleh Al-Hathloul and Narayanan Edadan** address the implications of the existing housing finance allocation policy on the housing needs. The study indicates that given the present housing market stagnancy, increasing household needs and structural changes in the housing demand pattern the Saudi housing sector is likely to face a shortage within the coming 20 years. The paper urges that housing development policy should be made more efficient to respond to the changing urban needs and housing preferences of the people.

One of the implications of the urban dynamics discussed in the earlier chapters is the location of activities on urban space. The objective functions determining the activity; residential and non-residential, location are the basis of the forces shaping the city forms. Locational preferences based on the accessibility and net rental surplus determine the urban structure and form of cities. In Chapter 8 **Abdullah Telmesani** explores an applicable model of residential location for Saudi cities by undertaking a detailed study of Riyadh. The study concludes that the housing finance allocation policy, liberal land grants and subsidized transportation policy followed by the government are the main factors for the urban sprawl, decay of inner cities and the unstructured urban growth. This calls for a spatially differentiated spatial development policy within the cities.

In Chapter 9 **Birch, Al-Kahtani and Al-Ribdi** examine the provision and use of two vital services: education and health. Even though massive investments made in the basic service sector have achieved high level of quality of life by any standards, marked disparities remain in the level of this provision. Regional disparities in the provision of services are influenced not only by the scattered and polarized nature of regional settlement distribution but also by the investment policy of the government. The analysis based on two regional case studies indicates that urbanization continued at the present level is expected to place increasing pressure on the social service sector. Further, the increasing urban demand for basic services in the future may slow down further progress towards the provision of better access to the wide range services to rural communities. This calls for a comprehensive strategy for the provision of services to the urban and rural areas.

The role of the State in shaping the urban form and structure of cities is the main topic discussed in Chapter 10. **Faisal A Mubarak** traces the role of the



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Saudi Central Government in shaping urban forms through a historical evaluation. Even though centralization as a strategy for human development was required during the early days of nation building and for speeding up the transition from a rural subsistence economy to an urban industrialized economy, the paper suggests that modern problems of cities demand a change in this strategy. Local developmental problems emanated from the modern way of life are too complex to be tackled through the traditional institutions and instruments. Efficient solutions to local problems are revolved around the local participation in decision making. Since the Saudi urban system is matured to take developmental initiatives, Mubarak calls for speeding up the de-centralization process in the country.

It is in this context that the Chapter 11 dealing with a critical review of urban planning experiences by **Edward Lynch** is most interesting. The chapter examines the history of urban planning, particularly physical planning, and identifies some of the main reasons for the limited success achieved by the plans, even though they are produced in large numbers during the last 15 years. The paper lists large number of reasons for the limited plan effectuation: unclear delegation of planning functions, poor institutional mechanism for coordination, poor local participation, lack of legal basis of the plans, lack of technical capabilities of local bodies, etc. Alternative policy directions based on the institutional capabilities and urban needs should be evaluated before structuring the scope and objectives of urban planning.

The structure of urban government, particularly the concept of Local Development Authority, is the heart of Chapter 12. **Zahir A Othman** in this chapter discusses the validity and need of such an institutional setup to tackle the complex problems of Saudi cities based on the experience of Arriyadh Development Authority (ADA). ADA is the only such organization in this country and sharing the evolutionary process and achievements of ADA is very essential. The paper argues that the concept of development authority is replicable for other major cities in the country. However, few policies and measures, strengthening the capabilities of such an organization in particular and the planning process in general, are required.

One of the main spatial impacts of the past economic development process is the distortions in the historically evolved system of cities. Saudi Arabia had a balanced settlement system prior to the planned development period, but the settlement pattern became primate during the last 2 decades. Even though, Saudi Arabia is yet to experience the problems related to the urban primacy, a desirable goal of the national spatial development strategy is to avert the problems of primacy in the future by promoting a balanced spatial development approach. The national spatial strategy discussed in Chapter 13 by **Mohammad Abdel Rahman, Fadgoosh Al-Muraikhi, and Abdelaziz Al-Khedheiri** evaluate the suitability of various alternative

strategy scenarios and recommends a multi-strategy approach. The main focus of the strategy is not to slow down the urbanization process but to enhance the development attractiveness of smaller and medium towns. One of the salient features of this strategy is the concept of development corridor, which is aimed to utilize the existing physical capital stock of the larger cities and to promote their spread effects. The paper discusses few policy measures to realize the objectives of the national spatial strategy.

In the final chapter (14), **Saleh Al-Hathloul and Narayanan Edadan** draw together the main themes of these essays and attempt to present future urban development perspectives. The authors stress that many of the modern problems in the urban areas are interconnected and complex. The institutional capabilities to tackle the existing and future challenges as well as to utilize the opportunities should be strengthened. Al-Hathloul and Edadan strongly feel that urban development strategies for Saudi cities should be based on the demand side of urban development with strong local participation and well integrated with a national spatial strategy. Al-Hathloul and Edadan conclude with a look at the future: have we an incipient urban crisis on our hands, or are these urban challenges a passing phase of urban development adjustment process? Our search for a new urban development paradigm will be influenced by these future perspectives. This book is only a beginning in this search.

## Notes

- [1] **Note from the Editors:** There has been a re-organization of the administrative regions (*emirates*) in the country during the course of this study. In mid-1993, the Ministry of Interior has re-organized the *emirates* into 13 *emirates* instead of 14 *emirates*. The Qurayyat *emirate* has been dissolved and merged with the adjacent *emirates*.
- [2] The level of urbanization is defined as the percentage of urban population of the province to the total national population.





# 1 Saudi Arabian Urban Development In Comparative Perspective

William Parker Frisbie

Urbanization in the Kingdom of Saudi Arabia is distinctive in a number of respects. The rapidity of the process has been impressive, with the proportion of the urban population increasing from 10 to 15 percent in 1950 to 77.2 percent by 1992 (Central Statistical Organization, 1993; United Nations, 1991). Furthermore, urbanization, as a key element in economic development, has typically proceeded via extraction of surplus from the agrarian sector (Keyfitz, 1965), but the rural-to-urban transition in Saudi Arabia was financed largely through vast petroleum reserves, not through burdens placed on agriculturalists (Frisbie and Al-Khalifah, 1991). However, the fact that there are important differences between the process of urbanization in Saudi Arabia and that experienced by other countries does not mean that the demographic, social, and economic determinants found to be important in other societies have been absent or ineffectual in Saudi society (Al-Khalifah and Frisbie, 1989; Frisbie and Al-Khalifah, 1991). Indeed, it appears to be the case that recent urban policy in the Kingdom has been remarkably well-attuned to the nature of urbanization as observed in other societies. Thus, a useful means of understanding key elements of the Saudi urban system is to examine, in comparative perspective, the similarities and differences between the form and development of this system and urbanization as it has occurred in different places and times around the world. This, in essence, is the objective of the present research.

A comprehensive analysis of worldwide urban morphology and trends would fill many volumes, and it is surely apparent that in a single essay only an overview of selected topics can be considered. For the most part, the present chapter focuses on those features which appear most relevant in providing a context for a more complete understanding of urbanization in Saudi Arabia and may, in this sense, be viewed as introductory to other analyses appearing in this volume.

## Fundamental Conceptual Issues

One of the many problems associated with cross-national and cross-temporal research of this sort is that the operational definitions<sup>[1]</sup> of an urban place, urbanized area, metropolitan area, and so on, differ widely from country to country and

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over time. In many instances, size of place constitutes either the sole basis, or the most central part, of the definition. But the number of inhabitants necessary to achieve the designation "urban" itself varies substantially from country to country and, in some cases, size of place does not enter into the definition at all (e.g., see Hawley, 1971: 7, Table 1). Accordingly, it will be helpful to begin with a clear delineation of terms before turning to the subsequent analysis (which relies primarily on United Nations data and classification systems).<sup>[2]</sup>

Amos Hawley has provided a lucid and succinct substantive definition which suggests that a city is:

a permanent, relatively densely settled and administratively defined unit of territory, the residents of which gain their living primarily by specializing in a variety of non-agricultural activities. Obviously a unit of this kind cannot be self-sufficient; it is by definition interdependent with people living elsewhere who engage in different but complementary activities (Hawley, 1971:9).

The term "urban" has theoretical connotations that go well beyond the definition of a "city" inasmuch as urbanization "embraces the whole of an organization that is based upon a centre of settlement" (Hawley, 1971:9). Though, in the early stages, the influence of cities on their hinterlands may be limited in geographic and functional scope, there is a seemingly inevitable expansion of a city-based territorial division of labor organized around urban centres (as recognized by urban scholars in a wide variety of contexts; e.g., see Hawley, 1971; 1981; Rai, 1989). It is this growth process involving an evolution "from the simple, highly localized unit to the complex and territorially extended system" that is known as urbanization (Hawley, 1971:9). Finally,

Urbanness varies along two continua: it increases with the number and variety of linkages between central and scattered populations; and it increases as the amount of exchange with the external world grows in volume and diversity. (Hawley, 1971:10).

The importance of functional linkages and economic exchange for defining a system of cities has been amply demonstrated both within (Eberstein and Frisbie, 1982) and among societies (Meyer, 1986). As we shall see, this very general conceptualization is particularly instructive for present purposes in that urbanization in Saudi Arabia provides a highly salient example of how external trade linkages have been crucial to the development of a system of cities.

## Urbanization In Historical Perspective

Research consistent with the paradigm of sociological human ecology has often pointed to several requisites for the development of cities. The initial emergence of cities required a combination of technological advance and a favorable environment sufficient to allow the relatively permanent settlement of people who do not produce their own food and fiber. The first cities developed in alluvial valleys where the climate was dry enough to prevent leaching of soil nutrients, where river overflow, or irrigation, provided abundant water and soil nutrients (via sediment), and where transportation of goods was relatively easy. Specifically, the first "proto-cities" developed in the valleys of the Nile, Tigris-Euphrates, and Indus rivers (Hawley, 1971: Chapter 2; see also Lenski and Lenski, 1987). However, these initial advantages were not sufficient to generate large-scale urbanization of the sort that ultimately emerged so dramatically world-wide.

Among the requisites for full-fledged urbanization of societies is an agricultural surplus sufficient to free a non-negligible proportion of the population from food production and permit permanent settlements to develop (Hawley, 1964:72). For development from a rural, agrarian (or perhaps, pastoral) society to an urban, industrial society to occur, surplus product must be available as a basis for accumulation of capital for investment in industrialization. Historically, this has usually meant extraction from the agrarian sector by coercion, taxation, and/or uneven trade flows favoring urban populations (Keyfitz, 1965, Chapter 8). Examples of this extraction are found "in Western Europe (during the great period of city building that gained momentum from the 15th century onward), in the conflict between farmers and urban/industrial elites in the United States and Canada in the 19th and early 20th centuries, (and) in the more contemporary struggle between urban and rural populations in Southeast Asia" (Frisbie and Al-Khalifah, 1991: 650; citing Keyfitz, 1965). Other requisites for large-scale urbanization include adequate transportation technology, expansion of trade, accumulation of capital, and sufficient concentration of political power to allow protection of life and property and the circulation of goods and services (Hawley, 1964:72-73).

The evolution of an urban, industrial (or post-industrial) society has nowhere occurred without substantial problems and disjunctures partly because "(t)he city in the early stages of economic development in effect borrows from the countryside..." (Keyfitz, 1965: 304), and whether the "loan" is obtained via force, taxes, or tariffs, "(p)easants are not induced to suffer willingly merely in the cause of economic development" (Keyfitz, 1965: 274). The degree of conflict engendered by the appropriation of surplus depends on how rapidly the "loan" can be repaid in terms



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of the economic opportunities that development eventually provides for society at large.

Further, one need only observe the plight of impoverished, underserved and unemployed (or underemployed) rural-to-urban migrants who inhabit squatter settlements in and around cities in many developing countries to appreciate the difficulties involved. Roberts has noted that, in Latin American cities "between 20 and 30 percent of the urban population have incomes that are insufficient for adequate levels of food and shelter" (1978: 137), with between 10 and 20 percent housed in squatter settlements, while in many large Asian cities, the conditions are similar or worse. In areas of this sort, housing and public services such as individual water supply, sewer lines, paved roads, and health care facilities are insufficient or entirely lacking (Roberts, 1978: 137).<sup>[3]</sup>

Of course, the problems associated with inadequate urban services are closely related to the slowness of economic development, including insufficient job opportunities for a rapidly increasing population (Soares, 1969: Chapter 7). Moreover, it is probably erroneous to view city growth in developing countries as the core of the difficulty. As Davis has shown, neither increase in the proportion urban, nor the increase in urban-rural ratios in Asia, Africa, or Latin America has been particularly rapid compared to developed countries such as the United States at similar stages of development (1975: 74). Rather, the heart of the problem appears to lie in rapid overall population growth (especially the rural component) and the difference between the social, economic, and political contexts in which urbanization is occurring as compared to that experienced by today's developed countries at a similar stage (Davis, 1975). In any event, the intent here is not to produce a litany of problems and an assessment of their varying degree of severity around the world. The point is merely to acknowledge the obvious, viz., that the process of urbanization has not been a smooth one historically and that the relationship of urbanization to development, while undeniable in broad terms, has had an uncertain and uneven impact on different sectors of society.

## **Urbanization And Economic Development**

### **The Relationship Between Urbanization And Development**

What is the relationship between urbanization and development? Two seemingly contradictory conclusions quickly emerge from the literature. First, even a cursory familiarity with the topic is sufficient to convince us that there is no necessary association between the emergence of cities and industrial development (Hoselitz, 1969: 73-74). Great cities existed long before the industrial revolution,

and today's less developed nations certainly contain large population agglomerations. On the other hand, it is equally apparent that "industrialization and urbanization are effective means for economic advancement" (Hoselitz, 1969:73). Indeed, a strong positive relationship between urbanization and most conventional measures of development, such as increase in life expectancy, prevalence of modern means of transportation and communication, per capita consumption of energy, literacy, percent of the labor force engaged in non-extractive industry, etc., has been demonstrated (Hawley, 1971:Table 57; Schnore, 1969).

Closer evaluation suggests that any contradiction is more apparent than real. That is, the mere existence of cities, even those with huge numbers of residents, does not connote urbanization as defined above. To reiterate, the term "city" refers simply to the agglomeration of a non-agricultural population within administratively defined boundaries. Urbanization, however, refers to an organizational process that incorporates hinterlands as well as other cities in an expanded territorial division of labor based on functional interdependencies that often become society-wide in scope<sup>[4]</sup> and involves "a transformation of society the effects of which penetrate every sphere of personal and collective life" (Hawley, 1971:15). The emergence of cities facilitates development by agglomerating population into an easily accessible labor force and market and by allowing for economies of scale, in addition to serving as a base for extraction of surplus for investment in industrial development. But it is the expansion of the urban organizing influence over hinterlands and outlying towns and villages which provides the coherence and efficiency of operation that, in turn, facilitates development. More specifically, urbanization can spread economic opportunities more widely and help close the gap between urban and rural worlds. Urbanization promotes the conversion of an entire society into a domestic market for industry, and permits, but of course does not guarantee, a more equitable distribution of public services. This is because the existence of an urban system implies (1) an extensive transportation and communications infrastructure that narrows social and cultural gaps between rural and urban sectors and (2) a highly developed division of labor such that not all cities compete with all others, but rather specialize thereby creating a more integrated economy built on interdependencies (Hawley, 1971:284-285).<sup>[5]</sup>

It warrants mention that, over the years, a substantial number of scholars have been concerned with the spatial distribution characterizing urban systems. In particular, in numerous different countries at numerous points in time, a pattern has been observed in which there are a few very large metropolises, surrounded by a larger number of medium sized cities, and a still larger number of small cities, towns and villages. Such a distribution has come to be referred to as either a hierarchical or log-normal pattern. The latter rubric is purely descriptive in a geograph-



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ic sense, "because when the logarithm of the cumulative percentage of cities in various size categories is plotted against the logarithm of city size, the resulting curve approximates a straight line" (Frisbie and Kasarda, 1988: 645). Of considerably more importance is the implication of the former term because it denotes a functional hierarchy in which larger urban places produce all the goods and services available in smaller places, plus others which are more costly or less frequently used (Berry and Kasarda, 1977: Chapter 19; Smith and Weller, 1977).

Some urban scholars have tended to view a hierarchical pattern as particularly conducive to economic development, while a primate pattern, characterized by a situation in which there is only one, or a very few, very large cities, many small towns and villages, and a virtual absence of intermediate sized places, may be inimical to development. Underlying this conclusion is the assumption that a hierarchical system reduces the cost of exchange of goods and services across time and space among interdependent units (Frisbie and Kasarda, 1988: 645). By contrast, the primate pattern appears to reflect (and perhaps foster) a sharp cultural and economic duality between the modernized world of a few large cities and rural, underdeveloped hinterlands. More directly put, a hierarchical system has been conceived as one in which "(c)ities are the instruments whereby specialized subregions are articulated in a national space economy" while the primate pattern is both a cause and symptom of a dual economy in which primate cities "tend to have 'paralytic' effects upon the development of smaller urban places and to be 'parasitic' in relation to the remainder of the national economy" (Berry and Kasarda, 1977: 389, 393).

The spatial regularity found in the log-normal pattern is not the crucial element here. Early on, Berry (1961) adduced evidence that the anticipated double logarithmic, straight-line pattern was not always found in developed countries, while such a geographic regularity could sometimes be observed in less developed nations. Rather, it is functional relationships that are of primary relevance. Whether or not the log-normal pattern currently exists depends, among other things, on the land area of a country (e.g., a country may be too small in area to allow a full-blown log-normal pattern) and on the stage of development (i.e., a high degree of concentration of the urban population may well yield scale economies in the early stages of development while, at later stages when capital saturation occurs, lesser concentration may improve overall efficiency (Wheaton and Shishido, 1981: 21). A third issue is the degree to which a nation's boundaries encompass an economic universe. As Hawley points out, in Europe "city-building forces, operate over broad economic regions rather than within political boundaries" (1971: 279). Indeed, it might be argued that the emergence of the European Common Market offers formal recognition and additional support for cross-national relationships which have long existed de facto.

In other words, ecologists and other urban scholars do not view concentration of urban population in a few large cities as necessarily detrimental to development. The hypothesis that a "primate pattern," at least in initial stages of development may facilitate industrial growth and efficiency through "agglomeration and scale economies" (Wheaton and Shishido, 1981:17) is consonant with the economic theory of market areas (Losch 1954; Berry, 1967; Hawley, 1971; and Smith and Weller, 1977). It is also consistent with earlier writings by Christaller (1933) regarding "central place theory" which proposes that the "size of the market and the distance consumers are willing to travel" imposes structural constraints that ultimately result in a system of cities approaching equilibrium with respect to costs of production and distribution (Frisbie and Kasarda, 1988: 644). The basic assumptions of the theory have been summarized by Wheaton and Shishido (1981:21) as follows:

The first (assumption) is that, in any country, the actual distribution of urban settlements follows efficient or optimal economic behavior....The second assumption concerns the trade-offs which define this equilibrium. It is hypothesized that the number of production locations (urban settlements) emerges in a manner which minimizes the combination of unit production and buyer transportation costs. A large number of production centres allows dispersal, and hence a savings in transportation or access costs. At the same time, however, unit production costs will increase as the market, and hence production volume of each centre shrinks.

The implication is that basic economic forces will generate a pattern of urban settlement that is optimal for economic efficiency, and that "attempts to decentralize urbanization, at least at certain stages of development, might well have serious economic costs" (Wheaton and Shishido, 1981:18).

### **Comparisons Of More Developed And Less Developed Nations**

Regardless of the societal characteristic being investigated, it is common for cross-national research to include comparisons which divide the world into More Developed Countries (MDCs) and Less Developed Countries (LDCs). While this is a useful point of departure, certain analytical problems quickly arise. First, as with any analysis that depends on a few broad categories, a comparison of MDCs and LDCs masks a good deal of within-group heterogeneity. Second, a contemporaneous evaluation of differences between the less and more developed countries is often problematic because the circumstances under which today's LDCs exist are, in many instances, quite disparate from the conditions that existed when today's MDCs were at the same early stage of development. Hawley (1971: Chapter 12)

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provides a cogent discussion of several of the more striking contrasts which are summarized immediately below.

Perhaps the most significant difference is that when Western nations were beginning the process of urban/industrial development, their economic and political context did not include other highly developed competitors. By contrast, today's developing nations find themselves having to compete with countries already far down the road of development. Other differences include: (1) speed of change--Changes which required up to two centuries to run their course in the currently developed countries may occur within a few decades in today's LDCs; (2) population "safety valve"--When European nations were developing, there remained large, sparsely settled areas of the world to which excess population could immigrate, but today's developing countries have no such luxury, and their cities often must serve as substitute "safety valves" even though the number of jobs available may not be nearly sufficient to accommodate the burgeoning influx of rural-to-urban migrants; (3) industrial skills--When development began in earnest in MDCs, the gap between skills required by industries in the 18th and 19th centuries and those possessed by rural artisans, craftsmen, or even farmers was small, while the industrial technology currently necessary for LDCs to compete requires much higher levels of education and skill (Hawley, 1971: Chapter 12). In short, cities in LDCs currently must cope with more problems with less means in a shorter period of time than the developed countries at a similar stage. For present purposes, the most important implications are that at the very least, it is necessary to supplement empirical investigations of less and more developed countries with country-specific and region-specific comparisons and to employ longitudinal (as opposed to cross-sectional) information covering as many decades as feasible given data quantity and quality constraints.

## **World Urbanization: Trends And Projections**

Data of reasonable quality on the size and growth of urban populations of the nations of the world are available beginning around mid-century. This analysis relies on recent United Nations estimates and projections with the earliest information being that for 1950 (United Nations, 1991).<sup>[6]</sup> Fortunately, it was possible in many instances to base estimates on population censuses, but these enumerations are themselves of varying completeness and quality. Moreover, as alluded to earlier, different countries employ different operational definitions of what constitutes a city or urban place. To illustrate, both the United States and Mexico essentially define a city as a place of 2500 or more inhabitants, but in addition, the U.S. includes persons in heavily built-up areas termed "urbanized areas," some residents of



which live outside politically defined city boundaries. The minimum size necessary for a place to be characterized as urban is the same for both Saudi Arabia and Czechoslovakia -- 5000 inhabitants (United Nations, 1991: Chapter 3). However, the latter nation also adds a density requirement and other criteria. Yet other countries do not include size in the definition at all, so that the urban population refers simply to persons living in areas that are "urban" according to some administrative designation. Clearly, then, it is necessary to approach the tabulations presented below as approximations. On the other hand, there is no more reliable source pertaining to all countries of the world than United Nations statistics, so that it is deemed reasonable to draw cautious conclusions based on them.

In 1990, the world was still heavily rural (55 percent based on definitions of the sort referred to above; see United Nations, 1991: 2). While approximately three-fourths of the population of developed countries was urban, only 37 percent of the population of LDCs was so classified. The situation is reversed when one considers absolute, as opposed to relative, numbers. That is, of the 2.4 billion urbanites in 1990, 1.5 billion resided in less developed regions of the world. By the year 2025, well over half (65 percent) of the world's population is expected to be urban, with the urban percentages in more developed and less developed countries<sup>[7]</sup> projected to be 83 percent and 61 percent, respectively. Projections are that the urban population of the globe will rise to a staggering 5.5 billion by 2025, a figure larger than the entire population of the earth in 1990 (United Nations, 1991: Table 1 and Table A.2). Even more striking, the same United Nations projections anticipate that the urban population of LDCs will more than double (to 4.4 billion) between 1990 and the year 2025 (United Nations, 1991:2).

Given the fact that the population of more developed regions is already so predominantly urban, it is reasonable to expect urban growth rates to level off in these areas, and based on current trends and growth rates, the projections of extremely rapid growth of city populations in the developing world also appear reasonable. However, slowing of overall population growth is the goal of many nations and organizations, both national and international, so that it may be prudent to take these projections seriously, but not literally.<sup>[8]</sup> One means of enforcing caution in the use of projections is to focus attention on time periods less far removed from the present. For example, the accuracy of projections from 1990 to 1995 is apt to be much greater than that for projections which span several decades. Accordingly, in what follows, only projections extending two decades into the future (i.e. to the year 2010) are employed.

Trends in world-wide urbanization from 1950 to 1990 (with projections to 2010) are displayed in Table 3. The table presents the percentage of the popula-

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tion urban for various areas, which in descending order of aggregation are: the world, less and more developed countries, all world regions, major subregions, and finally, individual countries. Within each subregion, only selected countries are included as follows: (1) the nations representing the range of the urban distribution within subregion (i.e., the country with the lowest and the country with the highest proportion urban) as identified by the Population Reference Bureau's World Population Data Sheet (PRB, 1990) were included and (2) the country with the largest total population was always included.<sup>[9]</sup> There are only two exceptions to these selection criteria. First, while the United Nations data source on which the tables are based does not subdivide South America, it is useful to distinguish between Tropical and Temperate South America in accordance with the Population Reference Bureau classification system. Second, data are presented for every nation in the Western Asia subregion, for it is this region of which Saudi Arabia is a major part.

*Table 3*  
*Urbanization Trends: Percent Urban for World Regions*  
*and Selected Countries*

Region/Country	Year						
	1950	1960	1970	1980	1990	2000	2010
WORLD	29.2	34.2	36.6	39.5	45.2	51.1	56.5
More Developed Regions+	53.8	60.5	66.6	70.3	72.6	74.9	77.9
Less Developed Regions++	17.0	22.1	24.7	28.9	37.1	45.1	51.8
AFRICA	14.5	18.3	22.9	27.8	33.9	40.7	47.4
EASTERN AFRICA	5.2	7.3	10.3	15.0	21.8	29.0	36.0
Burundi	1.7	2.0	2.4	4.3	5.5	7.4	10.4
Ethiopia	4.6	6.4	8.6	10.5	12.9	16.8	22.7
Reunion	23.5	32.8	43.8	54.9	63.9	70.0	74.8
MIDDLE AFRICA	14.2	17.9	24.7	30.8	37.8	45.6	53.4
Angola	7.6	10.4	15.0	21.0	28.3	36.2	44.2
Equatorial Guinea	16.0	25.5	26.7	27.4	28.7	32.9	40.1
Zaire	19.1	22.3	30.3	34.2	39.5	46.4	54.0
NORTHERN AFRICA	24.5	30.0	36.0	39.9	44.6	51.2	57.7
Egypt	31.9	37.9	42.2	43.8	46.7	54.1	61.1
Libya	18.6	22.7	35.8	56.6	70.2	76.1	80.0
Sudan	6.3	10.3	16.4	19.7	22.0	26.5	33.5
SOUTHERN AFRICA	38.0	41.7	43.5	48.3	54.9	61.3	66.8
Lesotho	1.0	3.4	8.6	13.6	20.3	27.9	35.6
South Africa	43.1	46.6	47.9	52.7	59.5	65.8	71.3
WESTERN AFRICA	10.2	14.5	19.7	25.8	32.5	39.8	47.3
Burkina Faso	3.8	4.7	5.7	7.0	9.0	12.4	17.4
Liberia	13.0	18.6	26.0	35.0	45.9	56.5	64.5
Nigeria	10.1	14.4	20.0	27.1	35.2	43.3	51.1
LATIN AMERICA	41.5	49.3	57.3	65.0	71.5	76.4	79.9

Table 3, continued:

Region/Country	Year						
	1950	1960	1970	1980	1990	2000	2010
CARIBBEAN	33.8	38.3	45.6	53.0	59.5	64.8	69.2
Cuba	49.4	54.9	60.2	68.1	74.9	79.9	83.3
Guadeloupe	42.1	39.2	40.7	43.5	48.5	55.4	62.2
St. Vincent/Grenadines	12.5	13.7	15.0	16.8	20.6	27.0	34.6
CENTRAL AMERICA	39.8	46.7	54.0	60.4	66.0	70.6	74.7
Guatemala	29.5	32.4	35.5	37.4	39.4	44.1	51.3
Mexico	42.7	50.8	59.0	66.4	72.6	77.4	81.0
SOUTH AMERICA	43.2	51.7	60.0	68.2	75.1	80.0	83.2
Argentina	65.3	73.6	78.4	82.9	86.3	88.8	90.6
Brazil	36.0	44.9	55.8	66.2	74.9	80.6	84.0
Chile	58.4	67.8	75.2	81.2	85.9	88.9	90.8
Guyana	28.0	29.0	29.4	30.5	34.6	41.8	49.7
Venezuela	53.2	66.6	72.4	83.3	90.5	93.7	94.9
NORTH AMERICA	63.9	69.9	73.8	73.9	75.2	77.3	80.2
Canada	60.8	68.9	75.7	75.7	77.1	79.3	82.1
United States	64.2	70.0	73.6	73.7	75.0	77.0	80.0
ASIA	16.4	21.5	22.9	26.3	34.4	42.7	49.7
EAST ASIA	16.8	25.0	24.7	27.4	39.4	51.4	59.2
China	11.0	19.0	17.4	19.6	33.4	47.3	56.1
Japan	50.3	62.5	71.2	76.2	77.0	77.7	78.8
SOUTHEAST ASIA	14.8	17.6	20.2	24.0	29.9	36.9	44.4
Brunei	26.8	43.4	61.7	59.9	57.7	59.0	64.3
Cambodia	10.2	10.3	11.7	10.3	11.6	14.5	19.7
Indonesia	12.4	14.6	17.1	22.2	30.5	39.5	47.7
Philippines	27.1	30.3	33.0	37.4	42.6	48.8	55.6
SOUTHERN ASIA	16.0	17.3	19.5	23.1	27.3	32.8	39.9
Bhutan	2.1	2.5	3.1	3.9	5.3	7.8	11.4
India	17.3	18.0	19.8	23.1	27.0	32.3	39.3
Iran	27.7	33.6	41.0	49.6	56.7	63.4	69.4
Sri Lanka	14.4	17.9	21.9	21.6	21.4	24.2	30.7
WESTERN ASIA	23.9	32.9	43.2	51.5	62.7	70.3	74.9
Bahrain	63.8	82.3	78.7	80.5	83.0	85.4	87.6
Cyprus	29.8	35.6	40.8	46.3	52.8	59.7	65.9
Democratic Yemen	18.8	28.0	32.1	36.9	43.3	50.8	58.0
Gaza	50.5	68.4	82.1	90.2	93.6	94.9	95.7
Iraq	35.1	42.9	56.2	66.2	71.3	75.3	79.1
Israel	64.6	77.0	84.2	88.6	91.6	93.5	94.6
Jordan	34.7	42.7	50.5	60.0	68.0	73.9	78.1
Kuwait	59.1	72.3	77.8	90.2	95.6	97.2	97.6
Lebanon	22.7	39.6	59.4	75.5	83.7	87.0	89.0
Oman	2.4	3.5	5.1	7.3	10.6	15.1	20.9
Qatar	62.9	72.4	80.3	86.1	89.5	91.3	92.7
Saudi Arabia ***	15.9	29.7	48.7	66.8	77.3	81.8	84.7
Syria	30.6	36.8	43.3	46.7	50.4	55.8	62.2
Turkey	21.3	29.7	38.4	43.8	61.3	74.0	80.6
United Arab Emirates	25.0	40.0	42.3	81.2	77.8	77.8	80.4
Yemen	1.9	3.4	7.5	15.3	25.0	33.4	41.4



## Comparative Perspective of Urbanization

Table 3, continued:

Region/Country	Year						
	1950	1960	1970	1980	1990	2000	2010
EUROPE	56.5	61.1	66.7	70.4	73.4	76.7	80.1
EASTERN EUROPE	41.9	47.9	53.5	60.1	64.7	69.4	74.0
Germany, East	70.8	72.3	73.7	76.2	77.2	79.4	82.4
Poland	38.7	47.9	52.3	58.1	61.8	66.1	70.9
Romania	27.7	34.2	41.8	48.7	52.7	58.0	64.1
NORTHERN EUROPE	75.1	77.6	82.4	83.8	84.4	85.7	87.6
Ireland	41.1	45.8	51.7	55.3	57.1	60.2	65.0
Sweden	65.8	72.6	81.1	83.1	84.0	85.6	87.7
United Kingdom	84.2	85.7	88.5	88.8	89.1	90.0	91.4
SOUTHERN EUROPE	44.6	49.4	56.1	61.0	65.7	70.4	74.8
Albania	20.3	30.6	33.5	33.8	35.2	39.0	45.3
Italy	54.3	59.4	64.3	66.6	68.9	72.4	76.6
Spain	51.9	56.6	66.0	72.8	78.4	82.6	85.5
WESTERN EUROPE	66.6	71.4	76.4	79.1	80.8	83.0	85.5
Austria	49.1	49.9	51.7	54.8	58.4	63.1	68.7
Belgium	91.5	92.5	94.3	95.4	96.9	97.7	98.1
France	56.2	62.4	71.0	73.3	74.3	76.7	80.1
Germany, West	72.3	77.4	81.3	84.6	87.4	89.6	91.4
USSR	39.3	48.8	56.7	63.0	65.8	67.5	71.2
OCEANIA	61.3	66.3	70.7	71.2	70.6	71.3	73.3
Australia	75.2	80.6	85.2	85.8	85.5	86.4	88.3
Solomon Islands	8.3	8.6	8.9	9.2	10.6	13.8	19.3

- \* *Data abstracted from WORLD URBANIZATION PROSPECTS 1990 (New York: UN, Table A.1).*
- + *Includes North America, Japan, Europe, Australia, New Zealand and the USSR.*
- ++ *Includes Africa, Latin America, Asia (except Japan), Melanesia, Micronesia and Polynesia.*
- +++ *The 1992 national population census shows that 77.2% of the national population is living in urban settlements with more than 2400 people (Central Statistical Organization, 1993).*

Inasmuch as the objective here is to provide general background information that will serve as a context for analyses of urban development in Saudi Arabia which occupy the remainder of this volume (as well as a substantial portion of the present chapter), little attention is given to individual nations. Nevertheless, a number of general conclusions are obvious from Table 3. As noted above, the more developed regions, in relative terms, are more highly urbanized than their less developed counterparts. As is well known, the least urbanized regions are Africa and Asia, and the most urbanized are Europe and North America, and more recently, Latin

America, but substantial variation may be noted by subregion. Most areas of Africa remained very heavily rural in 1990. As a whole, Asia is also largely rural, with only a little over one-third of its population residing in cities in 1990. However, 63 percent of the population of Western Asia was urban in 1990. The urban percentage distribution in Western Asia is rather heterogeneous, ranging from less than 11 percent in Oman to over 90 percent in countries such as Kuwait and Israel. Urbanization in Saudi Arabia is treated in some detail below, but it warrants mention at this juncture that this nation is more than three-quarters urban.

Every world region, and most countries, experienced a monotonic increase in urban population between 1950 and 1990, and it is reasonable to expect continued expansion of the urban population in the foreseeable future. The only exceptions to positive growth up to 1990 appear to be associated with war and other severe social dislocations (e.g. Cambodia in the 1970s).

Obviously, many parts of the world are characterized by tremendous growth of cities. The rural-to-urban transition is more easily seen in Table 4 which, for five-year intervals, reports the annual average rate of growth of urban populations for the same areas that were included in Table 3. In order to appreciate fully just how rapidly urbanization is proceeding, consider the following relationship between annual growth percentages and the time required for a population to double in size:

<u>Annual Growth Rate</u>	<u>Number of Years for Population to Double</u>
1%	70
2%	35
3%	23
4%	17.5

Thus, if annual growth continues at the level estimated in 1990 (approximately three percent), the world's urban population would double in about 20 years, and even if the projected decline in growth rates is realized, doubling would still occur within 30 years or less (Table 4). Among the less developed regions, current growth in excess of four percent per annum implies a veritable deluge of new urbanities in the next few years with whom nations, which already find it difficult to provide minimal services, will be hard pressed to cope. By contrast, the average rate of growth among more developed countries fell below one percent in the most recent interval (1985-90). In fact, in the subregions which currently have very large proportions of urbanities (i.e., Northern and Western Europe), growth rates are below 0.5 percent, which means doubling of the urban population would not occur for well over a century.

Comparative Perspective of Urbanization

Table 4  
Urbanization Trends: Average Annual Rate of Change in Urban Populations\*

Region/Country	Year													
	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010		
WORLD	3.16	3.65	2.76	2.66	2.61	2.63	3.06	3.09	3.00	2.82	2.55	2.30		
More Developed Regions+	2.43	2.45	2.18	1.83	1.52	1.15	1.02	0.81	0.77	0.78	0.77	0.74		
Less Developed Regions++	4.26	5.25	3.46	3.59	3.71	3.95	4.62	4.53	4.19	3.74	3.25	2.85		
AFRICA	4.54	4.68	4.90	4.71	4.65	4.79	4.89	5.01	4.94	4.72	4.48	4.21		
EASTERN AFRICA	5.61	5.79	6.15	6.20	6.20	7.01	6.94	6.77	6.41	5.94	5.44	5.12		
Burundi	3.44	3.44	3.40	3.37	6.91	8.09	5.24	5.43	5.82	5.97	6.11	6.12		
Ethiopia	5.47	5.58	5.66	4.94	4.26	4.40	4.06	4.92	5.50	5.75	5.90	5.93		
Reunion	6.08	6.15	5.95	5.06	4.34	3.02	3.15	3.13	2.59	2.14	1.91	1.73		
MIDDLE AFRICA	4.09	4.26	5.34	5.50	5.09	4.87	4.89	5.05	5.07	4.98	4.83	4.56		
Angola	4.65	4.82	5.07	5.10	6.56	6.69	5.61	5.57	5.41	5.15	4.93	4.63		
Equatorial Guinea	5.87	5.72	1.99	1.80	-4.92	-0.47	7.46	3.14	3.71	4.16	4.51	4.73		
Zaire	3.76	3.91	5.63	5.61	4.02	4.06	4.32	4.64	4.82	4.87	4.83	4.55		
NORTHERN AFRICA	4.28	4.35	4.63	3.93	3.50	3.66	3.67	3.96	3.92	3.66	3.40	3.08		
Egypt	4.20	4.07	3.95	3.09	2.45	2.56	2.61	3.62	3.69	3.32	3.04	2.69		
Libya	3.84	5.60	6.53	10.32	9.50	8.18	6.96	5.35	4.67	4.12	3.89	3.54		
Sudan	6.95	6.76	6.75	6.85	5.72	3.98	3.99	4.18	4.58	4.88	5.05	5.05		
SOUTHERN AFRICA	3.22	3.33	3.00	2.89	3.48	3.31	3.64	3.61	3.49	3.29	3.04	2.79		
Lesotho	14.40	14.51	14.39	7.98	6.86	6.96	6.98	6.67	6.33	5.85	5.38	5.12		
South Africa	3.14	3.23	2.88	2.75	3.36	3.16	3.46	3.39	3.25	3.04	2.80	2.54		
WESTERN AFRICA	5.85	5.93	5.73	5.77	5.76	5.54	5.51	5.46	5.32	5.12	4.90	4.59		
Burkina Faso	3.90	4.11	4.18	4.25	4.21	4.27	4.84	5.36	5.91	6.32	6.56	6.35		
Liberia	5.76	6.13	6.22	6.21	6.07	5.91	5.90	5.88	5.55	5.16	4.74	4.30		
Nigeria	5.92	6.08	6.16	6.25	6.30	6.29	5.93	5.79	5.47	5.11	4.80	4.44		
LATIN AMERICA	4.52	4.42	4.38	4.02	3.81	3.49	3.22	2.93	2.63	2.35	2.11	1.90		

Table 4, continued

Region/Country	Year											
	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
CARIBBEAN	3.04	3.10	3.92	3.52	3.45	2.75	2.58	2.59	2.33	2.09	1.88	1.73
Cuba	2.93	2.72	3.05	2.79	3.06	1.96	1.85	1.89	1.60	1.31	1.05	0.88
Guadaloupe	1.63	2.34	1.98	1.81	1.06	0.67	1.41	1.76	1.94	1.98	1.66	1.44
St. Vincent/Grenadines	2.64	2.75	1.81	3.06	1.87	2.35	3.07	3.32	3.60	3.80	3.54	3.28
CENTRAL AMERICA	4.58	4.72	4.72	4.63	4.30	3.66	3.38	3.15	2.91	2.65	2.41	2.22
Guatemala	3.86	3.83	3.76	3.67	3.41	3.14	3.19	3.58	3.88	4.06	4.12	4.05
Mexico	4.72	4.86	4.84	4.73	4.43	3.69	3.36	3.03	2.71	2.39	2.11	1.90
SOUTH AMERICA	4.67	4.46	4.32	3.88	3.67	3.50	3.23	2.89	2.56	2.27	2.02	1.80
Argentina	3.25	2.82	2.22	2.04	2.26	2.14	1.87	1.64	1.48	1.38	1.29	1.18
Brazil	5.47	5.12	5.27	4.62	4.22	3.91	3.61	3.15	2.70	2.31	1.99	1.73
Chile	3.75	3.73	3.49	3.01	2.53	2.19	2.30	2.16	1.94	1.71	1.47	1.30
Guyana	3.13	3.48	2.66	2.04	0.82	1.29	1.85	1.60	2.59	3.46	3.07	2.79
Venezuela	6.52	6.03	4.51	4.09	4.99	4.77	3.85	3.27	2.79	2.40	2.17	1.97
NORTH AMERICA	2.75	2.63	2.08	1.63	1.07	1.09	1.17	0.99	0.95	0.92	0.91	0.93
Canada	4.04	3.76	3.01	2.35	1.26	1.14	1.26	1.09	1.02	0.96	0.92	0.90
United States	2.64	2.53	1.99	1.55	1.05	1.08	1.16	0.98	0.95	0.91	0.90	0.93
ASIA	3.98	5.26	2.79	3.04	3.33	3.54	4.58	4.54	4.18	3.68	3.09	2.60
EAST ASIA	4.61	6.72	1.91	2.24	2.47	3.09	4.85	4.98	4.31	3.46	2.49	1.69
China	5.61	8.73	1.21	1.71	2.09	3.94	6.72	6.63	5.41	4.16	2.89	1.94
Japan	3.40	3.31	2.47	2.20	2.55	1.06	0.81	0.51	0.50	0.48	0.44	0.24
SOUTHEAST ASIA	3.72	3.93	3.77	3.88	4.15	3.90	4.33	4.24	4.09	3.82	3.47	3.09
Brunei	12.16	9.52	8.26	7.58	3.73	2.72	3.07	3.40	2.52	2.40	2.24	2.00
Cambodia	2.24	2.40	3.48	3.98	-2.09	-2.07	3.54	3.96	4.19	4.22	4.30	4.58
Indonesia	3.32	3.72	3.72	3.89	4.92	4.88	5.37	5.00	4.56	4.01	3.36	2.83
Philippines	3.73	3.92	3.85	4.03	4.02	3.54	3.97	3.77	3.61	3.40	3.17	2.91

Comparative Perspective of Urbanization

Table 4, continued

Region/Country	Year													
	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010		
SOUTHERN ASIA														
Bhutan	2.81	3.09	3.49	3.63	4.00	3.89	4.15	3.96	4.03	4.01	3.87	3.64		
India	3.36	3.47	3.97	4.05	3.95	4.24	4.72	5.43	5.90	6.25	6.13	5.94		
Iran	2.39	2.66	3.18	3.27	3.76	3.66	3.80	3.63	3.82	3.77	3.66	3.48		
Sri Lanka	4.33	4.40	4.50	5.01	5.35	4.71	5.43	4.02	3.20	3.66	3.49	3.18		
WESTERN ASIA														
Bahrain	4.76	4.67	4.48	4.21	1.83	1.28	1.23	1.58	2.19	2.71	3.16	3.64		
Cyprus	6.12	5.82	5.71	5.25	4.95	4.40	5.14	4.59	4.09	3.53	3.11	2.77		
Democratic Yemen	6.22	4.87	4.00	1.92	4.42	5.19	4.56	3.97	3.37	2.82	2.38	1.97		
Gaza	3.23	3.31	1.71	2.40	1.06	1.95	2.43	2.35	2.16	1.96	1.78	1.67		
Iraq	5.95	5.96	3.64	3.41	3.31	3.82	4.32	4.68	4.85	4.74	4.42	4.06		
Israel	5.39	4.93	4.39	2.15	3.32	3.17	3.66	3.00	2.74	2.51	2.36	2.21		
Jordan	4.10	5.56	6.38	5.25	5.05	5.26	4.48	4.06	3.95	3.77	3.56	3.29		
Lebanon	8.51	5.36	4.86	3.77	3.57	2.75	2.13	1.96	1.73	1.59	1.42	1.25		
Oman	5.30	5.19	4.52	4.93	4.27	3.96	4.43	4.39	4.26	3.93	3.44	3.07		
Saudi Arabia	7.60	8.50	11.95	9.19	7.53	7.71	5.24	3.80	3.04	2.46	1.98	1.66		
Turkey	8.14	8.04	7.40	6.41	5.17	1.21	1.25	1.05	2.69	2.25	1.93	1.70		
United Arab Emirates	5.72	5.85	6.19	6.42	6.83	8.70	8.36	7.45	7.35	7.17	6.95	6.66		
Yemen	8.25	6.34	9.96	10.23	9.40	6.44	5.73	4.49	3.55	2.87	2.60	2.40		
EUROPE	8.87	8.51	8.57	8.17	8.40	7.74	6.02	5.11	4.56	4.20	4.04	3.78		
EASTERN EUROPE	4.40	4.57	4.79	4.83	4.23	4.08	4.15	4.46	4.56	4.49	4.35	4.03		
Germany, East	6.46	5.76	5.23	4.89	4.09	3.11	6.11	5.21	4.17	3.16	2.34	1.76		
Poland	7.47	7.12	9.95	9.26	29.04	14.32	4.84	3.26	2.24	1.87	1.81	1.98		
Romania	7.69	7.85	10.15	9.32	9.58	10.04	9.08	8.15	7.08	6.01	5.68	5.35		
	1.55	1.60	1.84	1.50	1.25	0.89	0.72	0.68	0.67	0.67	0.58	0.50		
	2.34	2.12	1.79	1.67	1.93	1.60	1.19	0.98	1.00	1.01	0.96	0.88		
	-0.28	-0.60	-0.06	0.25	0.15	0.12	0.00	-0.32	0.20	0.31	0.36	0.39		
	4.10	3.65	2.13	1.55	2.04	1.84	1.53	1.25	1.14	1.19	1.24	1.21		
	3.54	3.07	2.61	3.32	2.93	1.96	1.18	1.31	1.39	1.43	1.33	1.23		



Table 4, continued

Region/Country	Year											
	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
NORTHERN EUROPE	0.66	0.83	1.34	1.11	0.58	0.25	0.22	0.34	0.38	0.38	0.34	0.34
Ireland	0.99	0.27	1.52	1.73	2.19	1.98	1.21	1.21	1.40	1.54	1.64	1.67
Sweden	1.72	1.51	1.87	1.81	0.76	0.37	0.18	0.36	0.33	0.33	0.28	0.26
United Kingdom	0.41	0.63	1.07	0.79	0.27	0.05	0.11	0.27	0.31	0.30	0.25	0.26
SOUTHERN EUROPE	1.88	1.81	2.15	2.01	1.69	1.58	1.24	0.97	0.97	0.92	0.78	0.62
Albania	6.66	6.90	3.98	3.51	2.67	1.94	2.30	2.41	2.52	2.67	2.75	2.78
Italy	1.55	1.50	1.57	1.42	1.01	0.66	0.54	0.36	0.48	0.54	0.44	0.32
Spain	1.72	1.69	2.63	2.54	2.09	1.97	1.36	0.98	0.93	0.84	0.68	0.50
WESTERN EUROPE	1.56	1.71	1.96	1.32	1.00	0.42	0.36	0.48	0.43	0.42	0.31	0.25
Austria	0.20	0.45	0.96	0.90	0.86	0.51	0.59	0.75	0.81	0.84	0.76	0.73
Belgium	0.63	0.74	0.86	0.60	0.34	0.29	0.20	0.11	0.10	0.04	-0.07	-0.12
France	1.84	2.02	2.77	1.93	1.30	0.52	0.55	0.53	0.63	0.71	0.66	0.64
Germany, West	1.65	1.78	1.78	1.02	0.80	0.29	0.16	0.40	0.20	0.11	-0.06	-0.17
USSR	3.92	3.89	2.92	2.58	2.08	1.81	1.57	0.98	0.86	0.98	1.09	1.16
OCEANIA	3.06	2.93	2.75	2.61	2.05	1.37	1.38	1.46	1.40	1.37	1.36	1.36
Australia	3.08	2.85	2.55	2.48	1.82	1.47	1.33	1.37	1.26	1.18	1.14	1.11
Solomon Islands	1.96	2.09	3.17	3.16	3.73	3.38	4.82	4.99	5.44	5.69	6.01	5.65

\* Data abstracted from *WORLD URBANIZATION PROSPECTS 1990* (New York: UN, Table A.5).

+ Includes North America, Japan, Europe, Australia, New Zealand and the USSR.

++ Includes Africa, Latin America, Asia (except Japan), Melanesia, Micronesia and Polynesia.

## *Comparative Perspective of Urbanization*

As before, the discussion of necessity focuses on broad, general trends, but the reader will observe from Table 4 that the averages presented, as astounding as they are in many respects, fail to do justice to the rapid trajectory of urban growth which not uncommonly has been in the four to five percent range, and even reaches double digits in a number of countries in Asia and Africa. In this regard, at least three points that were made either explicitly or implicitly in the earlier discussion should be reiterated. First, while the growth of cities in LDCs is unquestionably massive in magnitude, it is something of a misnomer to label this situation "over urbanization." As Davis (1975) and others have demonstrated, it is the growth of rural populations that has been most explosive. For example, in comparing "contemporary Asia with the industrial countries at an earlier time, we find that the main difference lies in the much faster growth of the rural population, not the urban population" (Davis, 1975: 84; emphasis in the original). Indeed, the term "under urbanization" may be more appropriate in two senses: (1) a part of the problem is that the number of cities is too few to provide the services and economic opportunities needed by the increasing population, and (2) it can be argued that were urbanization (as a process integrating an entire society in an efficient territorial division of labor) fully developed, the problem of excess population (excess in terms of the ratio of population to economic opportunities), the gap between population and occupational niches would be significantly narrowed.

Second, regardless of whether one speaks of "over-" or "under-urbanization," the fact is that many developing countries today are unable to cope with burgeoning urban populations. Unless trends change, many countries may face a harsh reality in which cities continue to grow and some degree of overall development occurs, but in which high levels of personal consumption will not be possible. Of such a situation, Davis (1975: 85) has commented: "Development without opulence, without sophistication, without urbanity -- that is apparently the path."

Third, and more optimistically, the areas of the world in which the proportions urban are highest are now experiencing (and are projected to continue to experience) the slowest rates of urban growth. Clearly, the urban proportion cannot increase indefinitely if only because some non-negligible number of persons must continue to till the soil and extract natural resources. On the other hand, the size of populations may continue to increase at rates far in excess of the ability of the social infrastructure to accommodate. Fortunately, there are "success stories" which give additional cause for cautious optimism. One example is found in Japan, which during the early 1950s was characterized by demographic trends suggesting that urban populations would double and redouble within a few decades. But, currently, the annual growth rate in that country is only 0.5 percent, implying about a century and one-quarter to doubling. Population growth has also begun to be strongly con-

trolled in the People's Republic of China. Although urban growth has recently been extremely high in that country, the overall demographic situation is such as to lead the United Nations to project the annual average rate of increase to be more than cut in half between 1990 and 2010 (Table 4). Of course, the situations of Japan and China are not typical ones. Population control in the latter nation has been imposed by highly coercive policies (including the one-child family mandate). Further, the attempt by China's leaders to stifle urban growth by resettling millions of urbanites in the countryside during the 1960s and 1970s (the results of which are obvious in Table 4) required a combined degree of control, coercion and ideological conformity not likely to be found elsewhere in the world (Palen, 1987: 363-365). Likewise, the situation of Japan following World War II, including American influence and aid in the immediate post-war years, and the economic niche Japan has carved out in the world economy, represent unusual, if not unique, conditions.

In many ways, Saudi Arabia constitutes another type of "success story". It is to a consideration of the remarkable Saudi rural-to-urban transition that we now turn.

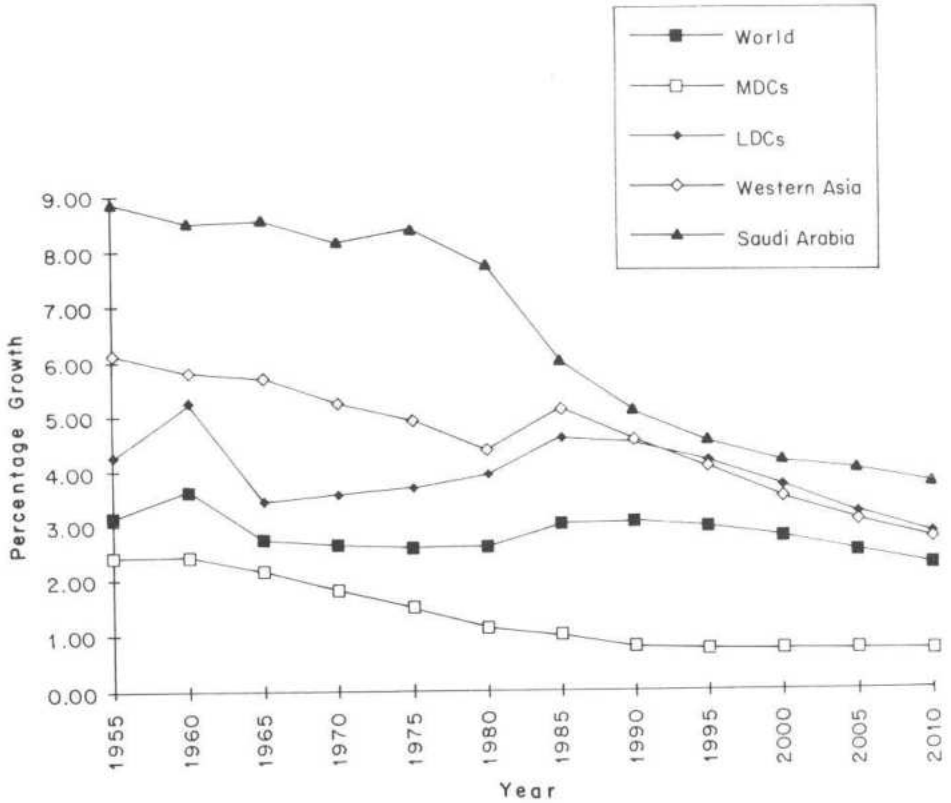
## **Urbanization In Saudi Arabia**

### **Summary Comparisons With World And Regional Trends**

Recall that Saudi Arabia was among the least urbanized countries in the world in 1950,<sup>[10]</sup> but was among the most highly urbanized nations in 1990. In fact, according to United Nations estimates, the percentage urban in Saudi Arabia (77.3 percent) was not only much higher than the world average in 1990 (45.2 percent), but was also higher than the percentage found in any major world region in that year (Table 3). For example, the relative number of urbanites in North America and Europe in 1990 was 75.2 percent and 73.4 percent, respectively, and only two subregions (Northern Europe and Western Europe) with urban populations totaling between 80 and 85 percent, exceeded the Saudi percentage.

Given the above, it is to be expected that the rate of urban increase in Saudi Arabia would be quite high by world standards (Table 4). As Figure 2 demonstrates, based on five-year averages, the annual urban growth rate in Saudi Arabia has far exceeded that for the world at least since the early 1950s, when the annual increase in the former stood at nearly nine percent, as compared to slightly over three percent for the world as a whole. And while the growth rate of urban populations in Saudi Arabia has declined over time, the rate of increase at the present time continues to exceed that for both less developed and more developed countries, as well as that for its subregion (Western Asia).

*Comparative Perspective of Urbanization*



*Figure 2: Average Annual Urban Growth Rate*

If one considers the 30 largest metropolises in the world in 1990 (see Table 5, Panel A), one finds that cities in widely divergent settings such as Mexico City, Tokyo, Buenos Aires, Seoul, Cairo, Paris, and Manila encompass from one-fifth to over 40 percent of the urban populations of their respective countries. If the focus is shifted specifically to Western Asia (Table 5, Panel B), numerous instances of cities containing major proportions of the urban population can be found. For example, the share of the urban population resident in Baghdad, Tel-Aviv, Amman, Kuwait City, Damascus, and Cairo ranges from 30 percent (Baghdad) to 55 percent (Kuwait City), while in Saudi Arabia, the populations of Jeddah and Riyadh together amount to less than 30 percent of the total.

*Table 5*  
*Percentage of the Urban Population in Cities of 1 Million or More*

City	Year					
	1950	1960	1970	1980	1990	2000
<b>PANEL A:</b>						
Mexico City	26.34	27.99	30.12	30.96	31.40	30.79
Tokyo	16.02	18.17	20.01	19.04	19.05	18.99
Sao Paulo	12.61	14.41	15.07	15.06	15.44	15.28
New York	12.63	11.20	10.73	9.29	8.69	8.18
Shanghai	8.75	7.08	7.72	6.01	3.52	2.77
Los Angeles	4.14	5.16	5.55	5.68	6.35	6.78
Calcutta	7.21	6.93	6.31	5.68	5.14	4.66
Buenos Aires	44.99	44.62	44.79	42.38	41.27	40.06
Bombay	4.70	5.11	5.30	5.08	4.85	4.57
Seoul	23.49	34.08	40.88	38.21	35.65	33.60
Beijing	6.42	5.02	5.59	4.62	2.83	2.28
Rio de Janeiro	14.90	15.06	13.16	10.94	9.51	8.63
Tianjin	3.89	2.90	3.61	3.72	2.46	2.07
Jakarta	19.94	19.79	19.07	17.86	16.44	15.90
Cairo	37.13	37.82	38.22	38.71	36.95	34.05
Moscow	6.84	6.01	5.16	4.88	4.65	4.32
Delhi	2.25	2.87	3.22	3.50	3.81	3.93
Osaka	9.10	9.78	10.22	9.35	8.97	8.66
Paris	23.16	25.37	23.11	21.61	20.41	19.37
Metro Manila	27.11	27.23	28.55	33.00	31.86	31.23
<b>PANEL B:</b>						
WESTERN ASIA						
Iraq						
Baghdad	31.97	34.69	37.77	38.13	29.98	25.66
Israel						
Tel-Aviv	51.45	45.37	41.10	41.22	44.69	45.99
Jordan						
Amman	21.00	30.11	33.38	36.76	37.60	37.72
Kuwait						
Kuwait City	100.00	100.00	96.50	66.98	55.38	53.89
Saudi Arabia ++						
Jeddah	7.00	9.18	12.43	11.90	11.13	11.05
Riyadh	7.69	10.42	14.58	15.86	18.07	20.53
Syrian Arab Republic						
Aleppo	26.22	25.15	23.35	25.68	27.33	27.57
Damascus	34.27	34.53	33.68	33.48	32.41	30.99



## Comparative Perspective of Urbanization

Table 5, continued:

Region/Country/City	Year					
	1950	1960	1970	1980	1990	2000
Turkey						
Adana	3.10	3.32	2.59	2.92	3.01	3.45
Ankara	12.20	10.68	9.96	9.72	7.59	7.10
Istanbul	24.25	21.25	20.54	22.60	19.42	19.28
Egypt						
Alexandria	15.98	15.32	14.24	14.63	15.06	14.71
Cairo	37.13	37.82	38.22	38.71	36.95	34.05
Iran						
Esfahan	3.92	4.22	4.67	5.08	4.79	4.74
Mashhad	3.70	4.04	4.36	4.94	6.08	7.22
Shiraz	2.72	2.78	2.78	2.99	3.71	4.45
Tabriz	5.02	4.51	4.26	4.46	4.63	4.89
Teheran	22.22	25.83	28.21	26.39	21.88	19.57

\* Source: *WORLD URBANIZATION PROSPECTS 1990*.  
(United Nations: New York, 1991, Table A.14)

++ According to the 1992 population census 15.60% and 21.24% of the national urban population (settlements with more than 2400 people) are living in Jeddah and Riyadh respectively and they represent 12.8% and 16.4% of the total population of the Country.

Although Saudi Arabia is not characterized by the presence of "mega-cities" of the sort observed elsewhere in the world (Dogan and Kasarda, 1988a; 1988b), the degree of urban primacy in Saudi Arabia, can be viewed as moderately high. And, given the debate over the effects of a primate city pattern on economic development, concern over potential excess concentration in a few large urban agglomerations is to be expected. Given the nation's high rate of urban growth, it is not surprising that a large majority of the inhabitants of major cities in the early 1970s were in-migrants from rural areas (Al-Ankary and El-Bushra, 1989) which, in turn, prompts an interest in possible problems associated with population mobility and redistribution. Fortunately, Saudi Arabia appears to have been able to avoid many of the more serious problems often thought to be associated with rapid urbanization. As mentioned earlier, urban growth in Saudi Arabia has not been fueled by a massive influx of impoverished rural population competing for an inadequate supply of urban job opportunities. Infrastructural support has been available from market-

ing of petroleum reserves, and there has been a labor shortage as evidenced by the large number of foreign workers in the Kingdom. Further, "squatter settlements" that often accompany urban growth in developing countries, and which made an appearance in Saudi Arabia in the 1950s and 1960s (as *bedouin* groups settled at the periphery of some major cities), have "disappeared from the townscape of Saudi urban centres through the integration of the inhabitants in modern urban life" (Al-Ankary and El-Bushra, 1989: 11).

We return to the specific issue of the primate city in a later section. At this juncture, however, the reasons for the relatively positive outcomes currently observable, which include a concerted urban planning effort and nation-wide development plans (as described in several chapters of the informative volume, Urban and Rural Profiles in Saudi Arabia [Al-Ankary and El-Bushra, 1989]), are perhaps more easily understood in terms of a consideration of the similarities and differences between urbanization in Saudi Arabia and the process as it has occurred elsewhere in the world.

### **Distinctive Features Of Urbanization In Saudi Arabia**

A number of distinctive features of the trajectory of Saudi urbanization are evident. Although other nations in which urban growth rates rival or exceeded those in Saudi Arabia may be identified (Table 4), the increase in Saudi Arabia's urban population was little short of breathtaking, especially in the period from 1950 to 1980 (Figure 2). In sharp contrast to the relationship typical of much of the rest of the world (Keyfitz, 1965), the connection between urbanization and development in Saudi Arabia did not involve either substantial burdens placed on agriculturalists in order to extract surplus for investment or major gaps between the number of rural-to-urban migrants and available employment opportunities in cities (Frisbie and Al-Khalifah, 1991). Instead, development has depended heavily on capital generated by marketing of petroleum. And, far from experiencing an excess of urban workers relative to jobs, Saudi Arabia has made considerable use of foreign labor to meet the needs of its economic growth. For example, in 1980, the foreign work force from Arab and Asian countries was put at just short of one and one-quarter million (Al-Ankary and El-Bushra, 1989: Table 4), a very substantial number for a nation whose total population is estimated to be in the neighborhood of nine million (United Nations, 1982; 1991). In general, then, the fact that Saudi Arabia has been characterized by a small population relative to land area has been advantageous. Annual growth rates of the total population, which in recent years have hovered near four percent and imply a doubling in 20 years or less (United Nations, 1991: Table A.7), suggest that reliance on foreign labor may soon become much less of a necessity.

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Furthermore, the country has made significant developmental progress. Standardized to 1988 U.S. dollars, GNP per capita in Saudi Arabia recently stood at \$6,170, which compares very favorably to the world average of \$3,470 (Population Reference Bureau, 1990). Given the rather brief period since the inception of the development plans, the Saudi figure perhaps comes closer to the per capita GNP figures for Europe (\$12,170) and all more developed nations (\$15,830) than one might expect. In regard to certain other indicators of development such as infant mortality and life expectancy at birth, the comparison is less favorable. Nevertheless, substantial progress is evident here as well. For example, life expectancy at birth in Saudi Arabia is estimated to have increased by 15 years (from 48 to 63 between the circa 1980 period and 1990 (Population Reference Bureau, 1980; 1990).<sup>[11]</sup>

In light of the differences in the context in which urbanization has occurred in Saudi Arabia, the degree to which urban structure and functional interrelationships parallel those in developed countries such as the United States is quite remarkable. For example, in Saudi Arabia:

Consistent with similar models tested previously with data for the United States (Clemente and Sturgis, 1972)..., factors such as population size, urbanization, and means of reducing the time and costs incurred in the exchange of materials and information are associated with the division of labor in a manner predicted by ecological theory (Frisbie and Al-Khalifah, 1991: 656).

Another example is found in the ecological theory of expansion which predicts that growth in peripheral areas of a territorial system "will be matched with a development of organizational functions in their centre to ensure integration and coordination of activities and relationships throughout the expanded system" (Kasarda, 1972b: 174-175; see also Kasarda, 1972a). This proposition is grounded directly in the more general principle of non-proportional change which proposes that continued growth requires a change in form if the growing entity is to survive (Boulding, 1953). With respect to urban systems, the implication is that the emergence of a large and highly ramified system depends on the development of more extensive coordinative structures that facilitate communication and administration of an increasingly complex system of interrelationships. Failing this, the only alternative is a "return to scale" -- a breaking up of the system into smaller units (Hawley, 1971: 137). This conceptual framework, then, predicts that the proportion of coordinative personnel (administrators, managers, clerical) and expenditures by central cities on such things as transportation, sanitation, and control services will be strongly related to growth of population at the urban periphery.



Considerable support has been adduced for this hypothesis in the United States (Kasarda, 1972a; 1972b). More important for present purposes, the nature of the relationship in Saudi Arabia was also found to be consistent with the theory advanced for central and village populations. However, the relationship did not hold for the waterpoint or nomadic population, which continues to evidence independence from the core (Al-Khalifah, 1985; Al-Khalifah and Frisbie, 1989). It should be noted that the latter findings emerge from mid-1970s data, and therefore it is possible that changes over the past decade or two, including continuing attempts to settle the nomadic population in new villages (*hijar*), have resulted in an even more extensive degree of integration of the Saudi urban-based system. The different nature of the findings pertaining to the nomadic population might have been anticipated initially because, in contradiction to most other countries (both MDCs and LDCs), "the ecological structure of Saudi Arabian society is formed of three dimensions, viz., nomads, villagers, and urbanites (Al-Ankary and El-Bushra, 1989: 4 citing Grill, 1984). Taken together, these results appear to be solid evidence in support of Hawley's perspective that while urban development will converge on a similar pattern, the extreme variation in cultural, environmental and social conditions which characterize different countries make it naive to expect an identical, unilinear pattern in the evolution of urban-economic development (Hawley, 1971: 293; 1981; 315).

#### **Urban Growth Models: Correspondence With The Saudi Experience**

Given the vast literature on urban form and growth, it is impossible to present a brief description of models of urbanization that does justice to their analytical richness. However, it is possible to present an abstract of certain crucial elements of the model of urban expansion that currently dominates the theoretical landscape. [12]

Whether one chooses to focus on the dominance of cities over their immediate hinterlands (McKenzie, 1933; Bogue, 1949) or on a system of cities that is national in scope (Eberstein and Frisbie, 1982; Smith and Weller, 1977), the essence of the model is found in the concept of a hierarchy of places integrated into a territorial division of labor. The hierarchy is based on both size and functional specialization. Not all communities compete with all others in regard to production of goods and services. Rather, all cities produce those goods and services consumed on a regular (daily) basis, but beyond this necessary minimum, "cities in each larger size class will perform all the functions of the next smaller groups of cities, plus other higher order functions" (Frisbie and Kasarda, 1988: 644). Integration emerges out of interdependence and exchange, with the entire system organized through coordination and control functions (e.g., commercial, financial, and administrative serv-

## *Comparative Perspective of Urbanization*

es) headquartered in large metropolitan centres (Eberstein and Frisbie, 1982; Frisbie and Kasarda, 1988; Wanner, 1977). Finally, because (1) the theory assumes a constant impetus to expand so that (2) exchange of goods and services will increase in regard to the volume of trade, the complexity of the interdependencies, and the distances traversed in conducting transactions, the demographic and organizational scope of a system depends on the adequacy of transportation and communication available to reduce the cost of the movement of goods, services and information over time and space (see Hawley, 1950: Chapter 15 for a cogent discussion of space as a "time-cost variable"). If the problems and costs associated with maintaining coordination and accessibility can be adequately resolved, the "ideal-typical" result expected would be a metropolitan society in which no area is isolated from urban influence and which provides conditions conducive to economic growth.<sup>[13]</sup>

Recent expressions of the Saudi Arabian perspective on urbanization are remarkably consistent with the hierarchical model of urbanization just summarized. To illustrate, let us consider five basic dimensions of the theory, examined in terms of the approach of scholars and policy makers to urbanization in Saudi Arabia as evidenced in the literature on Saudi development strategy. The ecological model describes (1) a hierarchical system of cities which (2) organizes the hinterland in a territorial division of labor based on (3) functional specialization and exchange. Substantial expansion of such a system requires (4) advances in transportation and communications technology, with the result expected to be (5) a context conducive to economic development as the process of urban expansion spreads markets and services over a widening area.

One of the most prominent initiatives of the Saudi government in recent decades has been a series of five-year development plans, beginning in 1970, with the aim of improving the standard of living and providing for greater equality in distribution of wealth (Al-Ankary and El-Bushra, 1989: 11). Although the first two five-year plans apparently did not delve deeply into urban planning, nevertheless, the first plan (1970-1975) "emphasized development in major cities" and the second (1975-1980) "was clear with regard to the need to develop lower-order cities and rural settlements" (Al-Ankary and El-Bushra, 1989: 11). To efforts at sedentarization of the nomadic population have been added the development of planned communities and new towns.<sup>[14]</sup> Prime examples of the latter include two new industrial cities, Jubail and Yanbu, construction of which began in 1976 and which are expected to eventually accommodate 280,000 and 150,000 inhabitants, respectively (Al-Soliman, 1989). The third plan (1980-1985) attempted to directly encourage the development of a system of service centres ranging from the local to the national level in order to avoid the type of concentration of services in a few large metropolises that is characteristic of a primate city pattern.



The congruence of the Saudi view of how urbanization should progress in terms of the hierarchical pattern and of the relationship of this model to economic development is clear. To illustrate, in describing the objectives of the development plans, Al-Ankary and El-Bushra note:

These strategies emphasize either directly or indirectly the need for a system of settlements, within a well-defined hierarchical structure. The development of a well-integrated settlement system will contribute to the development of the economy as well as curbing heavy migration from the rural areas and small urban centres into major metropolitan centres (1989: 11).

Similarly, Rai comments on the spatial pattern of Saudi urbanization as follows:

All human activity takes place in space and requires an organizational framework within which it can function. The spatial pattern of this organizational framework manifests itself as a system of settlements in a functional hierarchy... (Moreover), every settlement cannot have each and every function. While the population of a small-size settlement can support only the minimum services required for day-to-day living, population of a higher-order settlement can support specialized services (1989: 27-28).

Such perspectives could scarcely be more in tune with ecological theory regarding the nature of urbanization and its relationship to economic development as set out in earlier sections of this chapter (see also Hawley, 1971: 14-17, 235-236, 284-285 and Frisbie and Kasarda, 1988: 643-646). Likewise, the need for expansion of transportation and communication infrastructure to support the expanding urban system, as well as the coordinative function of major cities have been clearly recognized:

The development of a transportation network is considered to be crucial to the whole process of modernization and development, particularly in sparsely populated country like Saudi Arabia (Al-Ankary and El-Bushra, 1989:9).

With economic development and improved transport and communication linkages, more demands are generated for specialized services. A higher-order settlement therefore becomes a nucleus of a hinterland consisting of lower-order settlements and rural areas. (Rai, 1989:28).

## *Comparative Perspective of Urbanization*

The correspondence between ecological theory and the perspective on urbanization that apparently characterizes many Saudi Arabian scholars and policy-makers is quite close. Even more important is the fact that Saudi Arabia has apparently paid close attention to urban morphology and trends, and has mounted a national, integrated programme designed to, as far as possible, avoid the problems and reap the advantages of urbanization as experienced by other nations.

However, important questions of what specific policies should be implemented in order to attain the goals of increasing economic productivity and improving standards of living for all regions of the country remain to be answered, especially in regard to future spatial development and population distribution (Al-Hathloul and Edadan, 1992a: 15). For example, should Saudi Arabia be concerned that the concentration of urban growth in a few large cities (Riyadh, Jeddah, Makkah, Dammam) portends problems for attempts to sustain economic development and expand equality across regions? Here, the evidence from empirical research seems reasonably clear. Between the early 1960s and late 1980s, the trend in Saudi Arabia was one of increasing primacy in the first part of this time interval followed by decreasing primacy in the last decade (Al-Hathloul and Edadan, 1992a). This inverted U-shaped trend mirrors that observed by Wheaton and Shishido (1981) in their study of 38 nations, although the indicator of primacy employed varies across the research cited. Further, this curvilinear trend is consistent with the conclusions that: (1) a primate pattern may well be beneficial for economic efficiency in early stages of development (due to agglomeration and scale economies, as described earlier) and (2) "as development proceeds, some kind of capital saturation or diminishing urban agglomeration eventually begins to occur" (Wheaton and Shishido, 1981: 30). If such conclusions are valid, this suggests that Saudi policy which has attempted to produce a more fully integrated system across regions through investment in new cities, sedentarization of the *bedouin* population, and improvement of infrastructure, within the general context of the private market and of non-interference with the private sector (Al-Hathloul and Edadan, 1992a: 14) is basically on the right track.<sup>[15]</sup>

## **Summary And Conclusions**

The aim of this analysis has been the assessment of the differences and similarities in the process of urbanization in Saudi Arabia, as compared to the experience of other countries at specific points in time and over time. A number of distinctive features of Saudi urbanization have been identified, as well as striking similarities with conditions and trends observed cross-nationally and longitudinally. The level of urbanization in Saudi Arabia is currently quite high by world standards, but it is

not the highest. Likewise, the rate of increase in city population has been extremely rapid, but other countries have experienced urban growth rates that are as great or greater. What appears to set Saudi Arabia apart from most other societies (both developed and developing) is the fact that urbanization has proceeded so far and so fast while deleterious consequences that often accompany such growth have been minimized.

This is not to say that no social or economic problems exist. As alluded to above, the rate of increase in the population sustained by Saudi Arabia over the past several decades implies a doubling every 20 to 30 years. At the present time, the youth dependency ratio is high -- with only about 1.2 adults per child aged 14 and under (Bulatao et al., 1990), and a very young median age of 17.4 (Keyfitz and Flieger, 1990). The infant mortality rate (71 per 1000) is only moderately below that for the developing world (81 per 1000) as reported in Population Reference Bureau estimates (1990). However, Saudi Arabian cities have not become repositories for huge numbers of unemployed, under served, and ill-housed migrants. Nor has there been a failure of transportation, communications, and public service infrastructure of the sort that has so often characterized other societies which have experienced rapid population growth. Moreover, fertility declines appear imminent (Keyfitz and Flieger, 1990). Tremendous improvements have ensued including: (1) a substantial increase in quality of life as evidenced by growth in both life expectancy and GNP per capita, (2) the institutionalization of settlements to improve the conditions of the nomadic population, (3) the building of new communities and towns designed to spread services and opportunities more evenly, (4) massive investment in transportation, both public and private (Ghani and El-Shabani, 1989), and (5) a series of five-year development plans beginning in 1970 "aimed at raising the standard of living and the equitable distribution of wealth and welfare throughout the Kingdom" (Al-Ankary and El-Bushra, 1989: 11). The results have been impressive, especially given the brief length of time (1970 to the present) that the development plans have had the opportunity to operate.

Thus, the gloomy prospect looming for cities in many developing nations described by Davis as "Development without prosperity, urbanization without opulence, without sophistication, without urbanity..." (1975: 85) decidedly does not pertain to Saudi Arabia. Rather, assuming the absence of natural or man-made disasters, the future for urbanization in Saudi Arabia appears bright. Clearly, the enormous oil revenues available to this country constitute a primary reason for the relative positive position of the Kingdom. However, it should also be recognized that capital for investment in development is a necessary, but not sufficient, explanation. What is required, in addition, is the will to invest in the development of both natural and human resources that are the bases of economic development.



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Saudi Arabia has evidenced just such a determination. Finally, and most pertinent for purposes of this analysis, what may well be unique about urbanization in Saudi Arabia is the extent to which policies directed toward realization of the benefits of this system have been incorporated into national planning agenda.

### **Notes**

- [1] By operational definition is meant the method of identifying or measuring a phenomenon of interest which is to be distinguished from a conceptual or substantive definition which rests on a theoretical, as opposed to an empirical, rationale.
- [2] Descriptive statistics employed here may differ slightly from those reported in earlier publications. These differences likely result from somewhat different operational definitions and/or from the revision of estimates that take place over time. Because the aim of this chapter is the cross-national comparison of urbanization, it was deemed necessary to rely on the major international data collection agency, i.e., the United Nations, as the data source and to use the latest revisions available from that source.
- [3] It should be pointed out that the rapid economic growth that took place in the 1960s and 1970s led to substantial improvement in the urban infrastructure in countries such as Mexico and Brazil (Roberts, 1992, private communication).
- [4]. In this age of rapid transportation and instantaneous communication, so extensive have urban-based inter-dependencies become that it is possible to speak of world systems of cities (Meyer, 1986).
- [5] The discussion in this section also draws heavily on Hawley (1971: 14-17; 235-236; 309-311; see also Hawley, 1981).
- [6] Much of the data relied on by this research was prepared by the Population Division of the Department of International Economic and Social Affairs of the United Nations Secretariat.
- [7] As currently classified.
- [8] This is just another way of saying that the figures cited are not predictions of what will inevitably happen, but rather are projections of what would occur if current trends continue.

- [9] This means that at least two countries, and usually three, are listed under each major subregion. Where only two countries appear, this indicates that the largest country also represents one end of the range of the urban percentage distribution. The United Nations lists the former USSR as an undifferentiated whole; therefore no data are available for the now independent countries that formerly comprised the Soviet Union.
- [10] Available estimates range between 10 and 16 percent.
- [11] Other sources (United Nations, 1982) suggest the change in life expectancy has been less dramatic. Nonetheless, the improvement is notable.
- [12] Despite challenges and modifications since its inception, the dominant conceptual model of urban form and development is found in the literature of sociological human ecology, based on Amos Hawley's *Human Ecology: A Theory of Community Structure* (1950) and his later writings elaborating on this seminal work (1968; 1971; 1981; 1986). Since human ecology may be defined as the "study of territorially based systems of which the urban community is a prime example" (Hawley, 1971: 11), the special relevance of this theoretical approach to urban studies should be self-evident. Of course, the conceptual framework of urban ecology, like all theories of society, is not without limitations (Frisbie, 1980). For example, the so-called "critical theorists" argue, with some justification, that urban ecologists have neglected the role of the State in general, and the alliance between government and capitalist enterprise, in particular (Gottdiener, 1985). However, my contention is that it offers the closest approach to a complete theory of urbanization available.
- [13] The term "ideal-typical" refers to a formulation used for heuristic purposes to convey the essential features of an idea or concept, but which would not be expected to exist in perfect form in the material world. In a sense, the full "metropolitanized" society is simply a more stylized rendition of the hierarchical or log-normal pattern of cities described in an earlier section.
- [14] The detailed discussion of various types of planned communities in Saudi Arabia which has been provided by several authors (Al-Soliman, 1989; Mueller-Ibold, 1989; Al-Hathloul and Rahman, 1989) precludes the need for further treatment of the topic here.
- [15] **Note from the Editors:** Please refer to the Editors Note at the end of Chapter 4.





## 2

# Institutional Context Of Spatial Development Planning

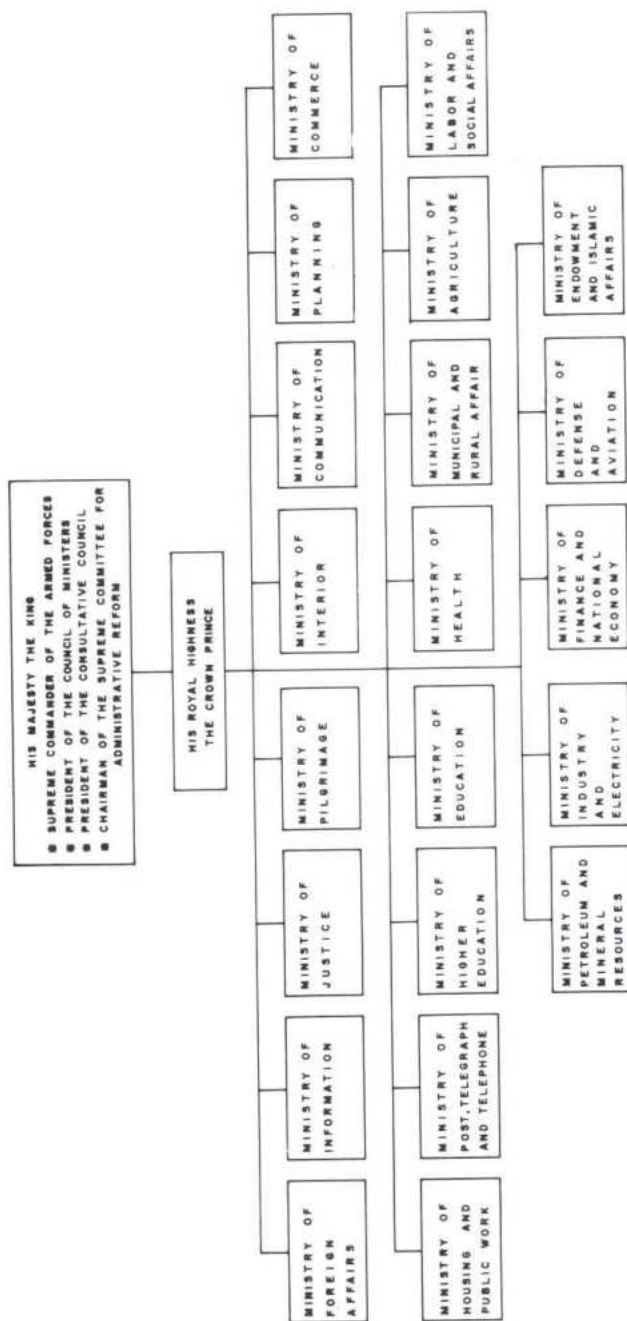
Omar A Mashabi

Over the past two decades the economy and built environment of Saudi Arabia have undergone drastic transformation. Besides the process of change fueled by the massive oil revenues, there has been a strong political commitment to economic and spatial planning with a view to promoting and controlling the orderly development of the Kingdom. There has also been a parallel development of central and local government arrangements with a capability for developing policies and securing their implementation. The Saudi planning experience has been rich and varied in this regard. The Government has introduced various innovatory approaches and techniques with a view to encouraging economic growth and developing the built environments in the interests of Saudi citizens. Much has been achieved but much more remained to be accomplished. This paper attempts to review the spatial development planning processes in Saudi Arabia, particularly the institutional context of spatial development in the Kingdom at the national, regional, urban and rural planning levels.

### The Political Context Of Planning

Saudi Arabia, established in 1932 by the late King Abdul Aziz Ibn Saud is a monarchy with the Qur'an (the Islamic Holy Book) as the constitution. The main national institutions of the political system in Saudi Arabia are: the King, the Crown Prince, Second Deputy Prime Minister, the Council of Ministers and Ministries and the Majlis Al-Shura. The King is the supreme authority in the country.

The Council of Ministers, which was first established in 1953 as an advisory body, has been a formal policy-making body with executive and legislative powers since the reign of the late King Faisal. The Council is responsible for issuing budgets and policies for most internal matters. However, the King approves all laws, treaties, concessions and the budget, and are implemented by issuing Royal Decrees. As a result of the re-organization of Ministries in 1975, the Ministry of Municipal and Rural Affairs, the main Ministry responsible for the development of human settlements, was created and there are 21 Ministries at present. Each Ministry includes a regional or district sub-organization, but with concentration of



*Figure 3: The Ministries of Saudi Arabia*

authority in the Central Government (Figure 3).

**Territorial Organization**

Saudi Arabia is composed of five major Provinces: Central, Western, Eastern, Southern, and Northern. Within the provinces the Kingdom is divided into 14 administrative regions called (*Emirate*) (Figure 4).<sup>[1]</sup> The division was established according to several factors:

"Geographical and environmental conditions, security requirements, and communication facilities. Each administrative area is divided into towns or *sub-emirate* and then into districts (Marakis). For each *emirate*, an Amir (Prince or Governor) is appointed as administrative head of the *emirate*. He is fully responsible to the Minister of Interior and Higher Authorities for proper administration of the concerned unit." (Samman, 1982: 229).



*Figure 4: Distribution of the 14 Emirates*  
 Note : The area under Qurayyat has been merged with the adjacent regions in 1992.



## ***Institutional Context of Planning***

Each *emirate* has an independent budget. There is some dispute regarding the duties and responsibilities of the *emirate*: some consider the *emirate* as a branch of the Ministry of Interior; others consider them responsible for all the matters within the *emirate*.

## **The Administrative Context Of Planning**

The administrative structure of planning in the Kingdom is provided by two main Ministries; the Ministry of Planning (MOP) and the Ministry of Municipal and Rural Affairs (MOMRA).

### **The Ministry Of Planning**

The Ministry of Planning is one of the six Ministries set up in 1975 in response to the new and pressing institutional requirements inherent in its rapid economic and social development. Its principal task is the preparation of Five-Year Development Plan for the Kingdom which set the framework for development activity at all scales in the Kingdom.

The main elements of national planning and development are:

### ***The Five-Year Development Plans***

The Five-year Development Plan preparation, began in 1970, has been introduced as the system of planning suitable for the country. It has been used to maintain and reinforce the interaction between four basic trends:

"The first of these is the expansion of the administrative institutions for the diverse function of the State. The second is the contribution of the oil sector for development. The third is the thrust on planned economic and social development. The fourth relates to the spontaneous response from society, including the private business sector, to opportunities offered by development. The interaction of all four has been mutually reinforcing; the higher the level of oil revenues, the broader the scope for development and institutional growth, and the greater is society's involvement in the process. The first three of these trends are under governmental control, and therefore, can be considered as planning variables". (Ministry of Planning, 1980: 5).

### The Principles Of Development Plans In Saudi Arabia

The main principles which guide Saudi Arabia's National Development Plans are expressed in the following goals;

- \* to maintain the religious values of Islam, by applying, propagating and fostering Allah's Shari'yah (the Islamic Law);
- \* to defend the Faith and the Nation; and to uphold security and social stability;
- \* to reduce dependency on the production and export of crude oil as the main source of national income;
- \* to develop human resources through education, training and raising of health standards;
- \* to develop the basic infrastructure which is required for achieving overall development.

### **Ministry Of Municipal And Rural Affairs (MOMRA)**

MOMRA is one of the six new Ministries incorporated in the Kingdom's new Cabinet in 1975 as a result of the rapid phenomenal expansion in government activities. It is;

"by far the most significant Ministry for urban development and planning. It is responsible not only for the formulation of planning policies at national, regional and local levels, but also the implementation of urban development projects and for coordination between Ministry and other agencies". (Daghistani and Ley, 1981: 149).

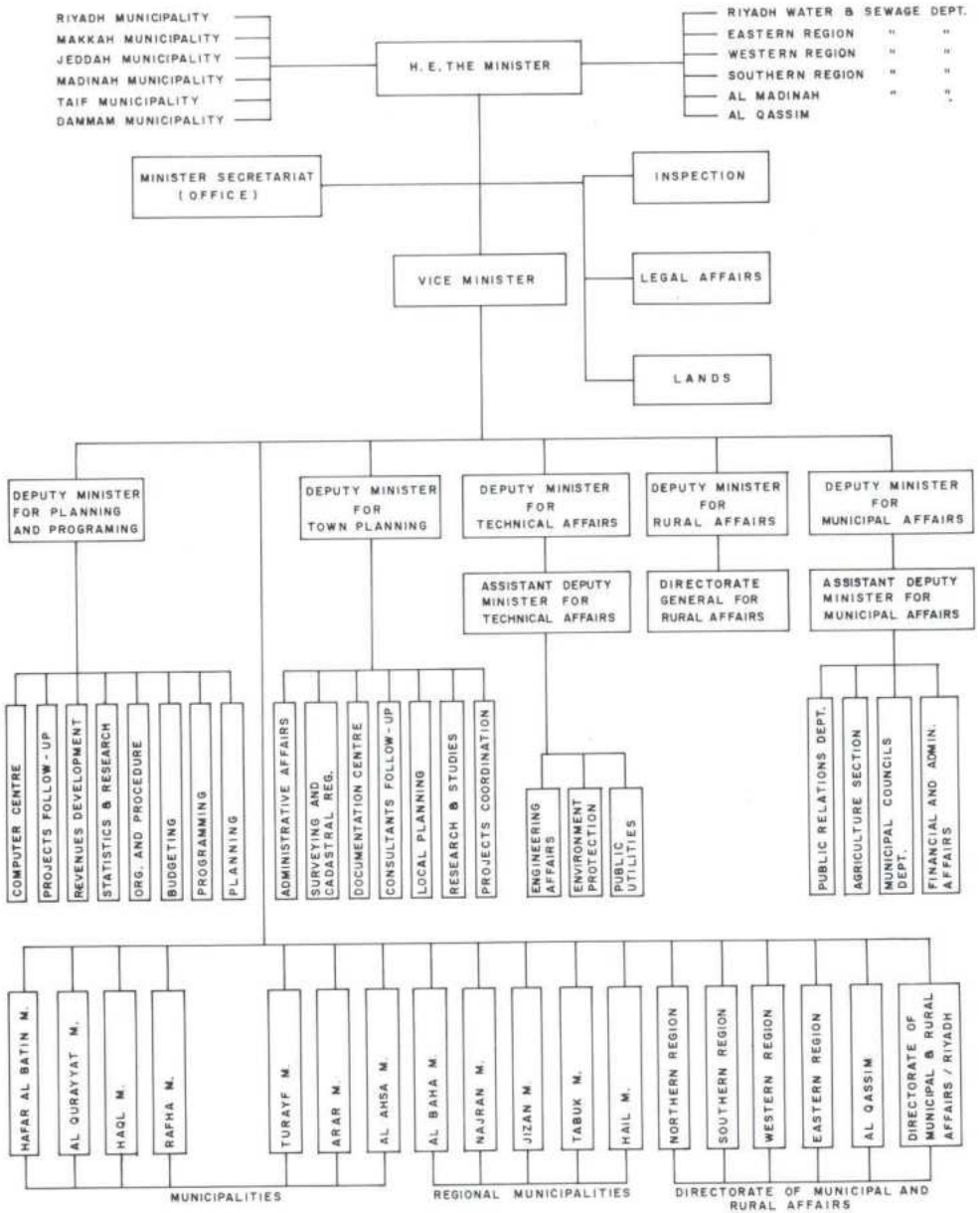
### ***MOMRA Organization***

The Ministry centrally consists of five specialized Deputy Ministries several special purpose departments; regionally represented by six Regional offices and water and sewer authorities; and locally represented by 101 municipalities, 43 village cluster centres serving 2,030 villages. (Figure 5).

### MOMRA

The Ministry has a wide range of functions relating to all aspects of municipal and rural development. The major responsibilities assigned to the Ministry in the development process are:

*Institutional Context of Planning*



*Figure 5: The Existing Organizational Structure of MOMRA*

- a) Planning and development of all cities, towns and village cluster centres: It is the biggest and most complicated task that the Ministry is responsible for. The urban development programmes, which include capital projects such as road, sewerage, drainage, water supply, require most of the Ministry's budget allocation. To carry this responsibility, the Ministry has to;
  - \* prepare plans for the "development of cities and towns, not only to accommodate its own infrastructure projects, but also to guide developments carried out by other Ministries and by private contractors" (MOMRA, 1978);
  - \* prepare capital investment programmes for implementing these plans; and control of urban development through the issue of building permits.
- b) Management of Municipal Services: Under this responsibility, the Ministry has three main tasks;
  - \* to provide environmental health and protection services to all people;
  - \* to maintain and operate the facilities created by its capital investment programmes such as roads, street lighting, water network, sewage disposal plants;
  - \* to enforce municipal regulations, particularly in the field of environmental health.
- c) Land Administration: The Ministry has a special responsibility in administering lands both inside and outside urban areas. The specific tasks carried by the Ministry are;
  - \* to manage the disposition of free lands, including grants, sales and rentals and to deal with all disputes and claims that may arise;
  - \* to administer the expropriation of land for municipal projects and deal with all actions that are brought about as a result of this process.
- d) Coordination of Rural Development: The Ministry is responsible for coordinating the development of rural areas outside the jurisdiction of the municipalities in order to ensure that the many projects and programmes being planned for the rural areas in all the Ministries and semi-government agencies succeed in raising the standard of rural life. The specific tasks carried out by the Ministry are;



## *Institutional Context of Planning*

- \* assuming the responsibility for the comprehensive development of villages in the Kingdom;
- \* implementing its programmes in rural areas, such as building local markets, and providing environmental health services.

### Deputy Ministries

The five Deputy Ministries are:

- a) Municipal Affairs (DMMA): DMMA is mainly responsible for the management of municipalities in the Kingdom.
- b) Rural Affairs (DMRA): DMRA is mainly responsible for the management of villages and rural development.
- c) Technical Affairs (DMTA): DMTA is mainly responsible for the design and supervision of municipal infrastructure projects and the environmental protection activities.
- d) Planning and Programming (DMPP): DMPP is mainly responsible for the development of a stronger capacity for policy analysis, programme planning, resources development and management and manpower development.
- e) Town Planning (DMTP): DMTP is mainly responsible for spatial planning activities in the Kingdom. Its specific responsibilities include: preparation of a National Spatial Strategy for the Kingdom; preparation of Development Plans for all the regions and cities.

### The Regional Offices (ROs)

The Regional Offices have been created as a means of decentralizing the Ministry's functions. They have two main purposes; the first is to improve the Ministry's response to the needs of the towns and rural areas and the second is to develop the towns' own technical and management capability in order to assume the responsibility for planning and managing their own development. The Regional Offices share all four of the MOMRA's main tasks as well as its own internal administration.

The Municipalities

- a) Major cities: (*Amanats*): This includes the six main cities of the Kingdom: Riyadh, Makkah, Jeddah, Madinah, Dammam and Taif. These cities have been granted the right to control their own physical development. Their Mayors report to the Minister in person.
- b) Other cities: These municipalities are grouped into several categories, A, B, C, and D. The criteria upon which the cities are categorized depends on several factors such as city population, zone of influence and location. The role of the municipalities regarding the four main tasks of the Ministry depends on their own category. (Figure 6).



Figure 6: Distribution of Municipalities

## *Institutional Context of Planning*

### Water and Sewers Authorities (WSA)

Water and Sewers Authorities have been created as instruments for planning, implementing and managing the urban water supply and drainage networks in the Kingdom as well as providing customer services. Each WSA is headed by a Director-General who is guided by the a Board of Directors appointed by the Minister and is responsible directly to him.

## **Evolution Of Comprehensive Planning In Saudi Arabia**

By comprehensive planning, we mean the type of planning which takes into consideration the three main dimensions of planning: sector, space and time. The Ministry of Planning through its sectoral framework of national economic development and the Ministry of Municipal and Rural Affairs through its spatial planning framework provide the comprehensiveness of development planning in the Kingdom.

### **The National Development Planning Process**

National Development Planning was introduced by the Government in 1970 to improve the mechanism for coordinating and implementing the programmes of the individual government agencies and the private sector. The main reasons for introducing National Planning were to eliminate some major constraints emerging because of the rapid growth of the economy; the inadequate infrastructural facilities, manpower shortage, and budgetary constraints.

The major feature of the First Five-Year Plan period (1970-1975), was the huge increase in oil prices in 1973, and the increase of Government share in the oil sector ownership. Oil enabled the expansion in budget allocations during the First Plan period, which was reflected in substantial progress in education, health, social services and physical infrastructure.

At the beginning of the Second Development Plan (1975-1980), in spite of the availability of financial resources, two factors; lack of infrastructure and manpower, militated against the achievement of rapid economic growth. Increasing the absorptive capacity of the economy and the problem of inflation dominated the development strategy. The two main features of this period were the manpower shortages and internal migration from the rural to urban areas. Although only 36% of population lived in urban areas in 1970, in 1980 the percentage had increased to 54%.

At the beginning of the Third Development Plan (1980-1985), there were several variables which influenced rapid development; the financial power of the country, the sufficient infrastructure, the control of inflation, the higher standard of living, and the improved manpower supply. By the second half of the Third Plan period, the drop in oil revenues was reflected in lower Government investment programmes and economic growth rates. However, by the end of the Third Plan significant improvements have been attained in the material and institutional areas of social development.

By the beginning of the Fourth Development Plan (1985-1990), it was clear that much had been achieved regarding the basic infrastructure; agricultural production; and development of petrochemical industries. Thus greater emphasis was placed on the social conditions of Saudi citizens. This was reflected in the objectives of the Fourth Plan. This is also true for the Fifth Development Plan (1990-1995).

#### ***The Development Strategies Of National Plans***

While the financial condition at the time of formulating the national plans differs from one plan to another, their development strategies are based on similar broad goals;

- \* diversification of the economic base,
- \* development of the Kingdom's manpower resources,
- \* a balanced pattern of economic growth which ensures development of all the regions,
- \* extends the benefits of national wealth to all sections of the community through welfare programmes, and
- \* supports individual effort and achievement.

#### **Regional Planning In The National Plans**

Regional planning has been treated variously in the Plans. Thus in the first National Plan, regional planning is not dealt with at all. On the other hand the second Development Plan divided the country into five socio-economic study regions: Central, Western, Eastern, Southern and Northern (Figure 7). The regional development strategy in this Plan was based on key economic development objectives:



## *Institutional Context of Planning*



*Figure 7: Socio-Economic Regions (Provinces)*

*Source: Ministry of Planning: Second Development Plan, 1975.*

- i) Wide distribution of productive investment based on the distinctive physical and human resources of each region,
- ii) Social programmes applied in accordance with needs.

The intent of this strategy was to distribute the wealth to all areas of the country and not to concentrate development in the main metropolitan centres. The actions taken to translate this strategy at regional levels were:

- "1) Central Region: Continued development of Riyadh as the administrative capital of the Kingdom, the development of industry not requiring large quan-

## ***Institutional Context of Planning***

trict (which can be delineated according to both accessibility to the particular services and capacity of the services).

Regional Centers: The location of various specialized economic, welfare and administrative institutions, which can reasonably be shared by a number of districts.

National Centers: Fulfilling various economic and administrative functions for the whole country, providing very specialized services, and a growth pole of national significance". (Ministry of Planning, 1980: 108-109).

The Regional Objectives of the Plans are;

- "\* pursuing balanced development; the encouragement of development in all regions and the extended provision of basic services,
- \* proceeding with the economic diversification of the regions in accordance with their productive potential and requirements,
- \* strengthening the coordination of agencies and programmes at the regional level (and below) and enhancing efficiency in the provision of services." (Ministry of Planning, 1985: 422).

The regional development policies adopted by the Fifth Development Plan are a continuation of the Fourth Plan policies, in which the system of a hierarchy of development centres was used, along with the village cluster programme, as an institutional framework for regional development. However, the Fifth Plan emphasized the importance of regional balance, rational utilization of national resources such as water and the administrative coordination in plan implementation (Ministry of Planning, 1990: 369-375).

## **The Spatial Development Planning Process**

### **Urban Planning**

Urban Planning in the Kingdom is well established. The urban planning process in Saudi Arabia could be categorized in to various phases.

#### ***The Phase Of Regulations And Statutes:***

It started in the early 1930s with the adoption of some rules and regulations

tities of water, and large-scale agricultural projects in rural areas.

- 2) Eastern Region: Major development of hydrocarbon-based industry and agricultural development in areas of high potential.
- 3) Western Region: Pipeline transfer of hydrocarbons for the formation of a second industrial growth pole, continued development of commercial, pilgrimage, and tourist activities of the main cities and the agricultural development in rural areas.
- 4) Southwestern Region: Agricultural development, domestic tourism in the highlands, industry and minerals development.
- 5) Northern Region: Agricultural development, minerals and industrial development" (Ministry of Planning, 1975: 58-61).

### ***Regional Development Strategy***

The main objectives for the regional development in the country as stated in the Third Plan were;

"to assist the regions, and especially the rural areas, to develop productive activities which will enable them to retain as many of their inhabitants as possible, and to extend the distribution of services to assist those communities with the potential for self-sufficiency, in accordance with the principles of Islam" (Ministry of Planning, 1980: 107).

This strategy was based on the "growth pole" approach to economic development. The key elements of this strategy were;

- "\* coordination of activities, projects and programmes of ministries and other development agencies having regional or district geographic responsibilities,
- \* more equitable distribution of socio-economic opportunities,
- \* provision of a development framework, for the design and implementation policies and programmes in all regions". (Ministry of Planning, 1980: 108).

The development of growth poles adopted for the strategy divided the development centres of the country into three types:

**"District Centers:** The location of the institutions and services needed frequently, but not daily, by a given population which is termed a dis-

which were specific measures to cope with specific local situations in the municipalities. These measures were institutionalized later and became rules and regulations applied everywhere in the Kingdom. Thus, for instance, the Royal Order No. 8723, dated 20 *Rajab* 1357 H (1937) specifying the duties of the municipalities and giving them powers to develop zoning regulations and building codes to carry out those duties, were perhaps the first action taken in the physical planning process. Another important action was the "Roads and Building Statute" which was issued in 1941. The main elements of this statute were; planning procedures, building codes, zoning and the right-of-way.

***Grid-iron Pattern Phase:***

The second phase in the urban planning process was the introduction of block and gridiron pattern systems for the development of ARAMCO (Arabian American Oil Company) oil-camps in the late 1930s. Another innovation introduced by the ARAMCO was the villa type residence built on a square lot and with setbacks. This system was introduced in 1951, and ARAMCO encouraged the construction of villa type residence by giving interest-free loans to build houses. The adoption of this innovation was strengthened by Al-Malaz Housing Project in Riyadh which was initiated by the Ministry of Finance in 1953 to house the Government employees transferred from Makkah to Riyadh. The physical pattern of this project follows the grid-iron plan with a hierarchy of streets, rectangular blocks, and large lots which in most cases take a square shape (Noe, 1980).

***Master Plan Phase:***

A more systematic approach to city planning was taken in the late 1960s with the introduction of the "Master Plan" concept to the Kingdom as a means of controlling and directing the growth of urban areas. In 1968 the Government assigned Doxiadis Associates to prepare a Master Plan for Riyadh. This Plan was submitted in 1971 and approved and sanctioned by the Council of Ministers in 1973. This plan institutionalized the physical systems discussed above (grid-iron pattern, blocks, villas, setbacks) for the City of Riyadh as well as other Saudi cities.

***Regional Physical Plan Phase:***

The Government had established the Deputy Ministry of Interior for Municipal Affairs in 1965 to tackle the problems of urban services and facilities caused by the rapid growth of cities and towns. The Deputy Ministry launched, in the early 1970s, five regional physical plan projects with the aim of achieving an orderly future growth of urban areas. Within each regional plan, master plans were pre-



## ***Institutional Context of Planning***

pared for five principal cities and towns.

The Deputy Ministry of Interior for Municipal Affairs was upgraded in 1975 to become the Ministry of Municipal and Rural Affairs, and the Directorate General of Town Planning to become the Deputy Ministry of Town Planning. The new Deputy Ministry of Town Planning had launched seven Action Master Plans projects in 1976/77 for seven main cities in the Kingdom. The cities were: Riyadh, Jeddah, Madinah, Dammam, Taif, Abha and Jizan. The international consultants appointed to formulate these plans were asked to help in establishing Planning and Development Departments in the respective cities to carry out the responsibility of upgrading the Master Plan continuously.<sup>[2]</sup>

### **Rural Planning**

The experience of rural planning and development can be divided into two phases. The first phase is characterized by fragmented governmental policies and programmes in the main fields of development: economic resources, human resources, social, and physical infrastructure.

For the economic resource development, there has been two types of programmes covering agriculture and water. The first type is a government-operated resource development programme which includes agricultural land development, agricultural research, water resources development and training, and manpower development. The second type is an incentive-oriented programme aimed at the private sector and includes agricultural credit, agricultural subsidies and agricultural land distribution.

For the human resources and social development, the Government has established schools in all the villages and *hijars* of the country where the number of students can support the schools, and provide transportation for students in areas without schools to the nearest one. Several Community Development Centers (CDC) have been opened in the Kingdom under the supervision of the Ministry of Labor and Social Affairs, in cooperation with Ministries of Agriculture, Education and Health to coordinate Government services with local efforts to improve the welfare of the communities involved.

A centre for training and applied research has been established in Dirriyah, near Riyadh, under the joint supervision of the Ministry of Labor and Social Affairs and the United Nations, for training the community development personnel and persons from other agencies participating in CDC programmes.

For the physical infrastructural development, rural roads, electricity and housing loans have been provided to the villages and *hijars* all over the country.

The second phase commenced after the creation of MOMRA in 1975 to carry the responsibility of municipal as well as rural affairs of the country. A major impetus came in 1982, when the Council of Ministers approved the Regulation of Villages Development in the Kingdom, giving MOMRA the responsibility to carry out the regulations which include:

- \* Developing the plans and programmes and proposing the General Policy for Comprehensive Development of Villages in the Kingdom.
- \* Forming general committees from the concerned agencies at the *emirate* level under the chairmanship of the Governor of each *emirate* or his designee.
- \* Conducting comprehensive surveys of villages in the Kingdom and classifying them into groups.
- \* Forming a Local Development Committee and its scope of work for each group of villages.
- \* Issuing the internal regulation for the Committees mentioned above.
- \* Appointing secretaries for all the Committees.
- \* Establishing a village cluster in each group of villages and appointing the heads of these clusters.
- \* Extending the services of some municipalities to the neighbouring villages.
- \* Providing some local services to other villages.

## **A Review Of Spatial Development Planning (1970-1980)**

The Saudi Arabian spatial planning experiences can be considered in two phases: the Regional Physical Planning phase and the Master Planning phase. The first phase began in the early 1970s with the launching of the regional physical planning programme to prepare physical plans for all the regions in the Kingdom. The second phase was initiated in the late 1970s with the preparation of Action Master Plans for seven main cities in the Kingdom (Riyadh, Jeddah, Madinah, Dammam, Taif, Abha and Jizan). In this section the salient characteristics of these two approaches will be described, analyzed and compared (Table 6).

These two spatial planning approaches introduced in the country during 1970-1980 had many potentials and solved many problems. In particular, they helped in educating the concerned authorities about planning and its process. However, they

Table 6: Comparative Analysis of Two Types of Spatial Plans

Salient Characteristics	Regional Physical Planning Approach	Master Planning Approach
<p><b>Project Title</b></p>	<p>a) <b>Brief Title:</b> Regional Physical Plan for the Eastern Region.                      b) <b>Consultant :</b> G Candilis Metra                      c) <b>Agreement Signed:</b> 1973                      d) <b>Cost:</b> SR 7.6 Million (US\$ 2.02 Million)</p>	<p>a) <b>Brief Title:</b> Action Master Plans for the Dammam Metropolitan Area.                      b) <b>Consultant :</b> CH2M Hill International and Central Engineering Services.                      c) <b>Agreement Signed:</b> 1977                      d) <b>Cost:</b> SR 26.4 Million (US\$ 7.04 Million)</p>
<p><b>Orientation</b></p>	<p>Physical Development Programme</p>	<p>Comprehensive Master Plans</p>
<p><b>Territorial Coverage</b></p>	<p>1) Eastern Region                      2) Main cities of Dammam, Al-Khobar, Al-Qatif, Al-Ahsa and Al-Jubail                      3) Detailed Study Areas within main cities.                      4) A village cluster centre.</p>	<p>1) Metropolitan Area of Dammam comprising Dammam, Al-Khobar, Dahrhan, Half Moon Bay Recreation Area, Al Aziziah Area and Sub-urban Settlements.                      2) Action Areas within the cities.</p>
<p><b>Scope of Work</b></p>	<p>As specified in the Agreement. The preparation of development programme shall be carried out in four stages.                      a) Evaluation of present situation and making recommendations for immediate actions.                      b) A framework for a Regional Physical Plan and development programme for the Eastern Region.</p>	<p>The Agreement specified:                      a) Preparation of Action Master Plans for the Metropolitan Area including:                      - Master Plans Scale: 1:10,000                      - Execution Plans Scale: 1: 2,500                      - Action Area Plans Scale: 1: 1,000                      - Cultural Area Plans Scale: 1: 500                      b) Revision of existing Master Plans.                      c) Preparation of new directive Master Plan for areas which do not have existing Master Plans.</p>

Table 6, continued:

TABLE 1: Continued

Salient Characteristics	Regional Physical Planning Approach	Master Planning Approach
(Continued ...)	<p>c) Master Plans and reports for Dammam, Al-Khobar, Al-Qatif, Al-Ahsa, Al-Jubail and a village cluster.</p> <p>d) Action Area Plans.</p>	<p>d) Creation of a data base and updating planning data.</p> <p>e) Establishment of a coordination system.</p> <p>f) Establishment of a technical machinery capable of undertaking the planning process in the Metropolitan Area of Dammam.</p>
Agreement Objectives	<p>a) Carry out studies to provide solutions on matters which cannot await the preparation of the Regional and Master Plans.</p> <p>b) Preparation Regional Physical Plans and Development Programme, which include an evaluation of the various existing social and economic forces at play as well as setting out policies for the development of all the sectors within Region.</p> <p>c) Prepare Master Plans for the major cities in the Region containing several main elements such as population and housing needs, employment, transport and land use.</p> <p>d) Prepare Action Area Plans for areas "the development of which is foreseen for the next ten years".</p>	<p>a) Assist in the establishment of Planning and Development Department capable of undertaking on a continuous basis the planning process related to the National Development Plans.</p> <p>b) Assist in the establishment and application of a coordination system to carry out efficiently planning, programming, budgeting and execution of projects for the Metropolitan Area of Dammam.</p> <p>c) Provide assistance in day to day work and render advice on ad-hoc matters to the Planning and Development Department.</p> <p>d) Prepare Action Master Plans and Execution Plans which indicate the exact location of the various elements of the Master Plan especially the infrastructure and socio-economic development projects as well as the National Development Plans Projects.</p>



## Institutional Context of Planning

Table 6, continued:

Salient Characteristics	Regional Physical Planning Approach	Master Planning Approach
<p>Salient Features of Contents</p>	<p style="text-align: center;"><u>Regional Plan</u></p> <ol style="list-style-type: none"> <li>1) <u>Future distribution of population</u> linked to the already decided industrial projects</li> <li>2) <u>Land Use</u>: residential area equal to six times existing Damman area needed</li> <li>3) <u>Networks and Facilities</u>: Improvements in national roads, railways and port facilities</li> </ol> <p style="text-align: center;"><u>Master plan</u></p> <ol style="list-style-type: none"> <li>1) <u>Physical Planning Problems</u>:               <ul style="list-style-type: none"> <li>- Confused land uses</li> <li>- Need for community centres</li> <li>- Need for hierarchy of road network</li> <li>- Concentration of services in the central zone</li> <li>- Need for a flexible urban fabric</li> <li>- Need for more dwelling units</li> <li>- Need for restoring architectural and aesthetic values</li> <li>- Providing community facilities</li> </ul> </li> <li>2) <u>Leading Socio-economic Factors</u>:               <ul style="list-style-type: none"> <li>- Population</li> <li>- Employment</li> <li>- Household income</li> </ul> </li> <li>3) <u>Land Use</u> <ul style="list-style-type: none"> <li>- 3,500 hectares</li> <li>- 233,500 inhabitants</li> </ul> </li> </ol>	<p style="text-align: center;"><u>Master Plan</u></p> <ol style="list-style-type: none"> <li>1) <u>Hierarchy of urban units</u>:               <ul style="list-style-type: none"> <li>- Neighborhood</li> <li>- Community</li> <li>- Urban centre</li> </ul> </li> <li>2) <u>Residential</u>: Three gross residential densities:               <ol style="list-style-type: none"> <li>a) High density-250 persons/hectare in centre of Damman and Khobar</li> <li>b) Medium density-150 persons/hectare in vicinity of Damman, Khobar and Dhahran</li> <li>c) Low density - 50 persons/hectare in areas between three existing centres</li> </ol> </li> <li>3) <u>Planned Unit Development Concept</u>: 3 Hectares or more comprehensively planned</li> <li>4) <u>Commercial</u>: Hierarchy of four shopping centres;               <ol style="list-style-type: none"> <li>a) Neighborhood convenience store</li> <li>b) Neighborhood shopping centre</li> <li>c) Community shopping centre</li> <li>d) Central business district</li> </ol> </li> <li>5) <u>Industrial</u>: 3,600 hectares for industrial use by 2005</li> <li>6) <u>Recreation and Open Spaces</u>: Hierarchy               <ul style="list-style-type: none"> <li>- Broad range of recreational activities</li> <li>- Neighborhood parks</li> <li>- Three community parks</li> <li>- Two regional parks</li> </ul> </li> </ol>

Table 6, continued:

Salient Characteristics	Regional Physical Planning Approach	Master Planning Approach
(Continued ...)	<p>4) <u>Transportation Network</u> at regional, metropolitan and local levels</p> <p>5) <u>Urban Poles</u>: present and future</p> <p>6) <u>Community Facilities</u>: Community centres, civic and commercial centres</p> <p>7) <u>Communications</u>: Urban and rural routes, railways, airports and ports, traffic</p> <p>8) <u>Utilities</u>: Power supply and utilities along with cost estimates</p>	<p>7) <u>Greenbelt</u>: 27 Km</p> <p>8) <u>Agricultural Land</u>: Preserve maximum</p> <p>9) <u>Transportation</u>: Improve highways and public transport system and preserve rights of way</p> <p>10) <u>Utilities and Community Facilities</u>: Hierarchy</p> <p>11) <u>Proposal for Visual Form</u>: Plaza and landscaped shopping mall area</p> <p>12) <u>Plan Implementation Proposal</u></p> <p>13) <u>Updating the Plan</u></p> <p>14) <u>Planning Organisation and Administration</u></p>

## ***Institutional Context of Planning***

also had many constraints and limitations. These included a lack of coordination between physical planning and socio-economic planning, piecemeal approach, inadequate public participation, difficulties in the implementation process, lack of vertical and horizontal programme coordination, lack of enthusiasm from local authorities, and shortage of skilled manpower.

These constraints can usefully be grouped under two main heading: the absence of a framework at the national level and the inadequacy of the regional physical plans for guiding development at the local level.

### **The Absence Of National Framework**

While the regional physical plans covered the whole country, plans under the action master planning approach could not constitute an unified national physical plan because of several problems. Some of the problems are:

- \* The time lag in the initiation and the completion of those plans, and the different methodologies and formats adopted by the consulting firms for the formulation and presentation of the plans and for the collection and presentation of data. These problems posed serious obstacles for integrating various regional physical plans at the national level.
- \* Master plans covered only a small part of the Kingdom's urban settlements.
- \* Planning metropolitan areas without linking it to the national setting, especially in a country with strong central authorities, has led to conflict of objectives.
- \* Regional socio-economic planning studies (prepared by the Ministry of Planning) and the Regional Physical Plans (undertaken by the MOMRA) were prepared without coordination between the respective agencies.
- \* Lack of coordination between the regional socio-economic planning studies identifying the new growth centres where major industrial complexes could be located and the regional physical plans which provided the framework for master plans.
- \* The lack of reliable and up-to-date information and the absence of a machinery for updating them was a serious problem (Manfeekhi, 1987).
- \* The methodology of data collection for the execution of the regional physical planning projects not only differed from one project to another but also the data itself had become outdated due to the lengthy procedure for preparing the plan (Daghistani, 1986).

### **Inadequate Guidance For Development At The Local Level**

- \* The master plans prepared for the different cities provided rigid guidelines

which made the data upon which the plans were based obsolete and the guidelines unworkable. The introduction of slow procedure to deal with fast development were simply unworkable.

- \* The projects did not establish adequate system for monitoring and review of plans.
- \* The projects did not introduce appropriate and effective implementation procedures.
- \* The introduction and practice of foreign ideas such as a grid pattern of commercial uses caused inconsistency with social preferences.
- \* The inaccurate forecasts of population, Government expenditures and employment meant that in practice the local authorities found actual situations very different from that proposed by the plan.
- \* The problem of Saudi technical manpower shortage was another main obstacle impeding implementation of the plans.
- \* The absence of a centralized technical machinery capable of handling all aspects of planning and implementation.
- \* The lack of participation procedure for the local authorities and the general public to become involved in the planning process from the beginning in order to achieve better and workable plans and to ease the process of implementation.
- \* The lack of vertical coordination between the different agencies because of ill defined relationships notably between the planning agencies and those responsible for implementation.
- \* The lack of horizontal cooperation and coordination between the different agencies responsible for planning and development of urban and rural settlements.
- \* The master plan concept involves many sectors over which the municipality does not have influence or authority.

In order to solve these main problems and to overcome the detailed shortcomings of the previous approaches a new era of comprehensive planning emerged incorporating some innovative ideas. This approach which is still in operation consists of two main planning activities: The National Settlement Strategy (1980-2000) and the regional and urban development plans. While the National Settlement Strategy is under the approval stage, the regional and urban development planning (structure planning) phase is under the formulation phase.



## **The National Settlement Strategic Guidelines**

### **National Settlement Strategy (1980-2001)**

The main goal behind the formulation of a National Settlement Strategy (NSS) is to provide a framework for the purpose of facilitating the distribution of economic and social activities over space to achieve maximum efficiency and the best use of the environment.

The main features of this strategy were as follows:

- \* It is concerned with the distribution of people over the national space,
- \* It relates human settlements to the economic and social transformation taking place in the country,
- \* It deals with the hierarchical distribution of the national space,
- \* It is of a long-term nature, though not a long-term plan by itself. It serves as a general framework for long-term planning, as it concentrates on the key aspects of the mobility of future population and resource utilization, leaving the detailed policies and programmes to the planning process according to a desired time dimension (long, medium or short term planning).

In brief, the National Settlement Strategy has been used as an effort to integrate all relevant aspects of development within their geographical setting in order to achieve development of the Kingdom at the national, regional and local levels.

The justification for the preparation of the National Settlement Strategy was based on the perceived need to determine the role of each region within the national economy by studying its development potentials and its integration with the national development planning framework. The strategy emphasized that inter-regional as well as intra-regional coordination of activity was crucial if the regions are to maximize their own growth potential and that of the Kingdom as a whole.

The strategy studied major characteristics and potentials of the provinces and then proposed a possible settlement strategy for each province.

### ***Strategy Choice***

"The physiography of Saudi Arabia imposes considerable limitations on the occupancy and use of space by people and consequently its development... However, with the initiation of large scale socio-economic development and massive expansion of physical infrastructure, the somewhat diffuse and isolated pattern of

distribution of population in the past is gradually being replaced by a process of concentration of population and economic activities at various levels....national, regional and local." (Deputy Ministry for Town Planning (DMTP), 1979: 63).

The NSS, for the purpose of regional and national planning, divided the territory of the Kingdom into three spatial categories:

- \* Populated areas: large population concentrations.
- \* Sparsely populated areas: tiny isolated settlements with some resources.
- \* Areas other than the above two categories: Consisting of empty spaces with few isolated settlements.

The suggested NSS covered only the first two spatial categories while the third was left to be dealt within the future revisions and updating of the strategy.

Populated Areas:

The concept of 'Development Area' was used by the NSS as growth pole within which development is polarized, or likely to polarize, around nodes which are growth centres. The structural composition of the NSS consisted of growth poles (development areas), growth centres, and service centres (Figure 8). The development areas were classified into three broad categories: metropolitan centre base development areas: agricultural areas; and special purpose development areas: industrial, religious and military areas.

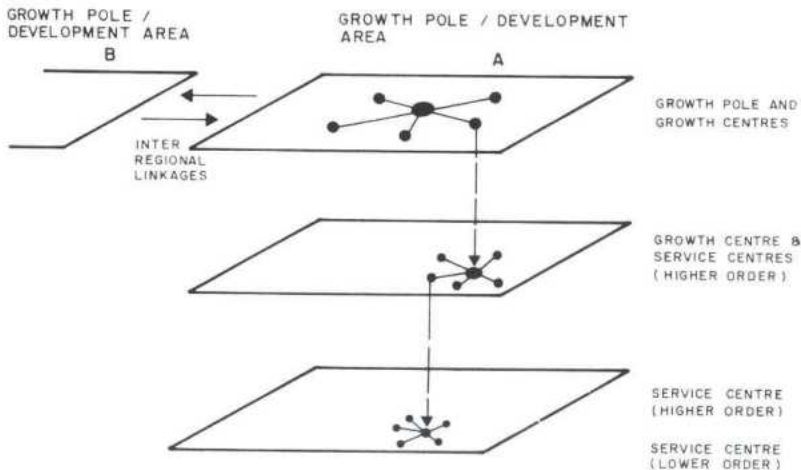


Figure 8: Conceptual Framework of the National Settlement Strategy (NSS)

## ***Institutional Context of Planning***

### Sparsely Populated Areas:

The main population characteristics of sparsely populated areas as defined in the NSS are; very low density areas with scattered and very small settlements, the settlements are unconnected by roads and the settlements are too small to be provided with standard facilities and services. The strategy adopted by the NSS for these areas was based on concentrating the population into larger settlements at locations with adequate water supply and where higher order services can be provided, linking those service centres to the nearest growth centres, and extending the basic services and facilities to all the settlements in the area. These centres are envisaged to support agricultural development and to serve in the future as regional extensions to the existing development areas.

### ***Implementation Of The Strategy***

The necessary steps required for the implementation of the NSS are:

- a) The adoption and execution of a comprehensive urban and regional planning approach for the whole national space,
- b) The establishment of the institutions of organizations, regional and local, for achieving coordination and integration between the regional, urban, and national plans in the country (DMTP, 1980: 84).

### **National Spatial Strategy (1990-2010)**

A revised version of the National Settlement Strategy was prepared in 1990, known as the National Spatial Strategy. The basic concept of this strategy is the same as its earlier version and it is based on a hierarchical system of national, regional and local growth centres. This strategy emphasized the importance of promoting a multi-polar system of settlement pattern.

The main elements of the strategy are evolved on the basis of a compromise between the economic efficiency and spatial equity scenarios of national development. Accordingly, the strategy contains elements emphasizing metropolitan concentration and regional dispersion development strategies. The main elements of strategy are: (DMTP, 1990: 138-165).

- a) Exploitation of the strong advantages of the major urban areas.
- b) Building economic potentials of selected centres.
- c) Promoting balanced development of higher order functions.
- d) Promotion of development areas between major urban centres.

- e) Comprehensive development of rural and marginal areas.
- f) Protection of environment and natural resources.
- g) Cohesion of national space.

### **Strategy To Limit Urban Growth**

The unprecedented urban sprawl and the resulting constraints to service the growing urban fringes coupled with the increasing level of vacant developed land within the main cities have drawn the attention of decision makers at the central and local government to contain city growth. Even though a similar strategy was envisaged in mid 1970s the actual policy decision came in 1986.<sup>[3]</sup> The DMTP was entrusted with the responsibility to draw urban limit boundaries for all the municipalities in the country. The DMTP accomplished this task within two to three years and the Urban Growth Boundary Plans prepared for 100 municipalities were approved by the government (see else where in this book for more details).

The urban growth strategy is phased in three phases and these phases are drawn consistent with the five-year development plans. The main objective of the first phase (1990-1995) is to contain the city growth within the already approved development areas. During this phase no new land subdivision is recommended and the land development is aimed to encourage urban in-fill. The main objective is to utilize the existing infrastructure investment fully. Any new subdivision outside the phase I boundary is permitted at the cost of developers. Phase II (1995-2005) and phase III (2005-2015) are envisaged to envelope the planned and approved subdivisions in two stages of development approvals. A study on the absorptive capacity of the developed land has shown that the existing planned and approved land in majority of the cities is enough to meet the population needs for the coming 10 years.

The implementation of urban growth limit strategy is underway. One of the elements of the implementation strategy is to prioritize the planned development units in terms of a set of comprehensive criteria which emphasize the utilization of existing infrastructure investment and to encourage urban in-fill. A second part of the strategy is to prepare urban structure plans for the cities in a phased manner.

### **Conclusions**

The paper is aimed to present an overview of the institutional context of spatial development planning in the country. During the past 15 years, since the formation of Ministry of Planning and Ministry of Municipal and Rural Affairs responsible



### *Institutional Context of Planning*

for the sectoral and spatial dimensions of development planning respectively, the country has pursued many strategies and plans to achieve comprehensive spatial development. The country has accomplished a great deal within this short period, but much more still remain to be done.

One of the main limitations of the prevailing spatial development planning process and its institutional structure is the inadequate vertical and horizontal coordination and inadequate availability of technical resources at the regional and local levels. It is necessary to encourage more active private participation in the urban development process. More attention is required to diversity the resource base and financial autonomy of local bodies and to induct positive planning approaches in the spatial development planning processes.

### **Notes**

[1] See the note on re-organization of administrative regions in the Kingdom from 14 regions to 13 regions. (Note 1 in the Introduction).

[2] The DMTP has completed the preparation of comprehensive development plans for all administrative regions and major cities by mid-1980s. Currently, the Ministry has initiated a structural planning phase. During this phase, structural plans are being prepared for all the municipalities and village cluster centres within the frameworks of National Spatial Strategy and Urban Growth Limit Strategy.

[3] Council of Ministers Resolution No. 13, 1986.

# 3

## An Overview Of Urban Development Process

Mohammad A Al Hammad

The impact of the rapid rate of urbanization process in Saudi Arabia can be spatially identified by the growth pattern of urban centres. The first phase of urban development started in 1902 long before the impact of oil production in Saudi Arabia. During the period 1902-30, the towns, villages and nomadic settlements experienced cultural integration and the country witnessed a continuous process of sedentarization of nomads. The Government policy of promoting sedentarization and planned settlement has transformed the rural population from a nomadic, semi-nomadic and semi-settled life to a fully urbanized life. This first attempt to settle and urbanize the *bedouins* has initiated a continuous process of rural-urban migration in the country and has contributed a great deal to the exponential growth of towns and cities in the later years.

In 1932, after its political unification, Saudi Arabia had a balanced settlement pattern with well spread cities and smaller towns. However, with the commercial production of oil in 1938 the Saudi urban scene began to change. Urban development entered the second phase with the increased oil production in 1950. Oil production centres began to emerge as new towns. Major urban centres such as Riyadh, Jeddah, Makkah and Madinah were completely transformed into primate urban centres supported by the physical and socio-economic infrastructures developed during the last 20 years. Attracted mainly by the oil wealth induced growth bonanza, migration became an important factor of urban population growth and distribution. The growth in the natural increase of population is another reason for the fast growth of cities. During 1960 - 1985, the level of urbanization has been estimated to have grown from 15 percent to 75 percent (Ankary, 1989).

The third phase of urban development which began in the 1970s was influenced and structured by the comprehensive development planning efforts initiated at the national, regional and local levels. The rapid growth of major cities is attributed mainly to the progressive development policies of the Kingdom. These are being vigorously pursued against the backdrop of a significant socio-economic transformation carried out under the national Five-Year Development Plans and the development planning programmes of the Ministry of Municipal and Rural Affairs.

## **Urbanization And Urban Growth**

Rapid and high level urbanization has been looked upon as a problem of development in development literature because continued migration of rural population to the large cities has accentuated the problem of high degree of unemployment and under-employment in many cities in the developing world. On the contrary the Saudi cities have experienced a shortage of skilled and semi-skilled laborers to implement the development programmes conceived in the national plans. This is true for many other oil economies as well. The population structure of the Gulf Cooperation Council (GCC) countries thus reveals unique demographic characteristics with a large percentage of local population in the early age group and a high percentage of expatriate population in the working age group.

The increasing number of work places has increased the demand for social and infrastructural facilities, such as water, housing and other utility services. Besides, the migration of foreign labor force and the seasonal migration of pilgrims into Saudi Arabia constitute an important segment of the urban population in the Kingdom. This component of urbanization is best illustrated by the growth of the two holy cities, Makkah and Madinah during the Hajj season which places heavy demands on the infrastructural facilities and public services in the two cities as well as in the Jeddah-Makkah corridor.

Major cities such as Riyadh, Jeddah, Madinah, Makkah, Taif and Dammam have experienced very rapid changes in their urban structures and forms as a result of the unprecedented urbanization process. The water needs of urban households, industrial and agricultural uses have been met by the creation of new desalination plants. However, rapid rate of urbanization has created a serious spatial imbalance in housing and infrastructure and services provision. As a result of vigorous industrial growth, commercial expansion and concentration of population in urban centres, there is an ever increasing demand for housing.

With the discovery of oil in the Eastern Province in mid-thirties and some other mineral deposits in the Western and Central Provinces, some existing cities such as Riyadh, Dammam, and Al-Hassa began to experience high population and physical growth. Their growth rates, however, were low until the fifties but a burst in growth was witnessed in the seventies. As a result, the national spatial scene underwent some structural changes, the remarkable features of which are as follows:

1. Population distribution began to show concentration in the urban and semi-urban centres, away from the dispersion associated with the nomadic way of

life. The rate of urban population shot up to 77% (United Nations, 1992).

2. With the introduction of adequate municipal services and infrastructure, the urban centres were transformed into modern cities with a high quality of life. This promoted investments and boosted commercial activities in the cities and their rural hinterlands.
3. Traditional farming has been transformed into large-scale modern agricultural farming to supply the cities with ever increasing demand for grains, vegetables, fruits, poultry, dairy, meat, etc.
4. Urban population of Saudi Arabia has grown steadily over the years. During a period of 40 years (1950 - 1990) the proportion of urban population rose from 10 percent to 77%.

### **Phases Of Urban Growth**

The process of urban growth in Saudi Arabia has been marked mainly by three phases of development such as; pre-oil era, pre-planning and post-planning phases. The pre-oil urban growth phase was set in motion by the government programme aimed at rehabilitation of nomadic tribes. This rehabilitation programme motivated the *bedouins* to migrate to urban centres seeking employment opportunities (Ankary & El-Bushra, 1989).

The pre-planning urban growth phase had begun with the production of oil in the country and its impacts on urban growth. The sedentarization process which began with the rehabilitation programme for nomadic population had resulted in the emergence of *bedouin* settlements. During this phase major urban centres witnessed the growth of squatter settlements.

The third phase of urban growth took the form of planned urbanization as a result of development planning at the national, regional and local levels since 1970. This phase marked the implementation of five Five-Year Development Plans. The national development plans are formulated within the perspective of Islamic teachings with a view to fulfill social needs. The First Five-year Development Plan (1970-1975) emphasized infrastructure development. In this sector, it gave priority to improvement and extension of sewerage and potable water systems, building of municipal facilities, slaughter houses, markets, paving, asphaltting and lighting of streets, etc. The main larger cities benefited from these developments were Makkah, Madinah, Riyadh, and Jeddah.



## *Urban Development Overview*

The Second Five-Year Development Plan (1975 -1980) sought to emphasize economic, social and physical development by means of equitable distribution of financial resources between all the regions. The urban centres and rural settlements received substantial financial allocations based on planning strategies to realize the following goals:

- i) to achieve sectoral and physical development utilizing available resources at the local level,
- ii) to direct physical development patterns on the basis of current and future population distribution and activities,
- iii) to integrate urban growth centres with overall national development strategy.

Based on the above goals, a few main growth areas both urban and rural settlements, were selected to cover all regions of the Country.

The growth and distribution of population during the First and Second Five-Year Development Plans indicate a general increase in urban population. Major cities witnessed substantial growths, while the population of smaller towns decreased in absolute numbers and rates. Rural and desert population have experienced a substantial decrease as a result of migration to the main cities.

A few other observations could be drawn from the population growth trends during 1970-1980:

- i) The population share of larger cities has increased at a higher rate during the 1970-75 period as compared to 1975-80,
- ii) The population share of small cities registered a 10% decrease during 1970- 1975. But it has increased by 8% during 1975-80,
- iii) Despite a 8% decrease in the population of rural areas during 1970-75, it has registered a remarkable 35% increase during 1975-80.

Saudi urban growth continued through the Third Five-Year Development Plan 1980-1985. Plans were formulated to achieve long range objectives, and to remedy minor shortcomings resulting from the earlier two plans. Social targets were fixed to make optimal use of resources and to effect structural changes in the human resources in particular.

Urban growth continued through the Fourth Five-Year Development Plan (1985-1990), which emphasized resources development to maintain the pace of national development particularly at a time when the country was entering the

production phase of development. The Fifth Five-Year Development Plan (1990-1995) places more emphasis on achieving balanced development between the country's various regions and consolidating the stability and growth of the economy at the same time.

### **Urban Growth Factors**

Urban growth refers to increase in urban population relative to a country's total population. The phenomenon is accompanied by physical expansion of existing cities or the creation of new ones. Urban growth is a demographic phenomenon resulting from the interplay of many factors, the most significant of which is the economic factor. Some of the demographic factors are:

- i) natural urban population increase, which generally out-paced rates prevailing in rural areas and desert settlements,
- ii) migratory population movements to cities from rural settlements, and abroad,
- iii) incorporation of adjacent villages and urban fringes into the sprawling cities.

Natural increase in population of Saudi cities and urban centres is attributed to improvement in health care - services and economic affluence. Thus, Saudi population increase reflects an increase in the net birth rate and a decrease in the mortality rate. Mortality rate in the urban areas is lower than the rural areas and desert settlements. The pattern of migration in Saudi Arabia has been influenced by the strategy of urban concentration. The urbanization process in turn has generated economic and social opportunities and attracted both internal and external labor migration to cities. The internal and international migration in Saudi Arabia is mainly attributed to employment opportunities which are the main pull factors in the urban centres (Grill, 1984).

The national development plans and the industrialization process in the Kingdom have succeeded in generating employment opportunities. As a result during the Second and Third Plans over 3 million non-Saudi workers were added to the labor force. At the same time, the size of the qualified national work force has also increased as a result of the rapid expansion in the educational and training facilities. In the beginning, the Saudi manpower was increasingly absorbed within the government rather than in the private sector. However, an important goal of the Fifth Plan (1990 - 95) has been to increasingly provide opportunities for Saudi nationals in the private sector.

## Urban Development Overview

To achieve the economic growth objectives of the Fifth plan, total civilian employment is targeted to increase from 5.77 million in 1989/90 to 5.98 million in 1994/95 representing an average annual rate of growth of 0.7 percent. Employment in the private sector is projected to increase by 204,800 while the government sector employment is envisaged to increase by only 8,700 (See Table 7).

*Table 7*  
*Projected Civilian Employment in the Fifth Plan*

	Employment		Net Change	
	1409/10 (000)	1414/15 (000)	1409/10 (000)	1414/15 ( percent ) (Distribution)
Public Sector	5147.0	5351.8	204.8	95.9
Government	624.8	633.5	8.7	4.1
Total	5771.8	5985.3	213.5	100.0

*Saudi Arabia. Ministry of Planning: Fifth Development Plan, 1990-1995.*

Because very little growth in employment in the public sector is envisaged over the Fifth Plan period, employment opportunities for Saudis in the public sector will be generated primarily through the implementation of active Saudization programme.

During the Fifth Plan period, the producing sector's share of employment is projected to increase from 35.0 per cent at the beginning of the period to 36.0 per cent at the end. The service and government sectors are expected to account for smaller employment shares. In the producing sectors, manufacturing employment is targeted to grow by 85,600 additional jobs, at an average annual rate of 4.2 per cent (see Table 8).

Besides the demographic factors some other key factors which have played a determinant role in the process of urban growth in the Country that merits a quick review:

1. The transformation of Saudi way of life from a nomadic style to an urban style came about as a result of the stability in the political order and through the process of division of labor. The institutionalization of public

**Table 8**  
**Projected Civilian Employment by Sector During the Fifth Plan**

Sectors	Employment		Percent Distribution		Ave. Annual Growth (%)
	1409/10 (000)	1414/15 (000)	1409/10 (%)	1414/15 (%)	
<b>Producing Sectors</b>					
Agriculture	569.2	596.6	9.9	10.0	0.9
Other Mining	3.5	3.8	0.1	0.1	1.7
Manufacturing	374.9	460.5	6.4	7.6	4.2
Petroleum Refining	14.6	15.0	0.2	0.2	0.5
Petrochemicals	6.2	6.5	0.1	0.1	0.9
Other Manufacturing	354.1	439.0	6.1	7.3	4.4
Public Utilities	126.9	136.7	2.2	2.3	1.5
Construction	944.1	959.9	16.4	16.0	0.3
Sub-total	2018.6	2157.5	35.0	36.0	1.3
<b>Service Sectors</b>					
Trade	898.3	922.2	15.6	15.4	0.5
Transport, communications	262.3	271.3	4.5	4.5	0.7
Finance, Real Estate	99.0	112.2	1.7	1.9	2.5
Community and Personal Services	1822.0	1840.9	31.6	30.8	0.2
Sub-total	3081.6	3146.6	53.4	52.6	0.4
<b>Government Services*</b>	624.8	633.5	10.8	10.6	0.3
<b>Non-Oil Sectors</b>					
Crude Oil and Natural Gas	46.8	47.7	0.8	0.8	0.4
<b>Total</b>	<b>5771.8</b>	<b>5985.3</b>	<b>100.0</b>	<b>100.0</b>	<b>0.7</b>

\* Excludes non-civilian employment and includes daily wage workers, not classified as civil servants.

Source: Saudi Arabia. Ministry of Planning: Fifth Five-Year Development Plan, 1990-1995.

services and utilities provided the basis for economic and industrial growth which in turn has contributed to the high urban growth. The 1992 population census shows that 66% of the total Saudi population live in urban areas (Central Statistical Organization, 1992).



## ***Urban Development Overview***

2. The concurrent effects of urban pull factors and rural push factors have increased the level of urbanization in Saudi Arabia to the extent of 77%.
3. Foreign labor is another factor which has contributed to the rising urban population growth. This is because urban centres and metropolises have a greater capacity to absorb population and provide a wide range of employment opportunities. In 1992 about 27.3% of the total population in the Kingdom are non-Saudis and 90% of them live in urban areas.
4. The Islamic religious centres, Makkah and Madinah, have unique characters which tend to attract people and thus sustain high growth rates. Jeddah, an important seaport on the Red Sea, specially for being the gateway to these religious places, has gained in population enormously.
5. New industrial cities were built, particularly in Jubail (on the Arabian Gulf) and Yanbu (on the Red Sea). These cities accommodate large scale oil and petro-chemical industries belonging to Saudi Arabian Basic Industries Corporation (SABIC), Petromin and other large companies. As a result, these new individual cities and dependent urban areas have experienced rapid urban growth.
6. The institutionalization of modern infrastructure, public utilities and amenities in large, medium-sized, and small cities, as well as towns and villages have provided key inputs for constant growth of these centres.

### **Urban Development Objectives**

The urban development guidelines of the Kingdom reflect the values and principles upon which the social goals of future development are based. These guidelines are:

- i) To make the urban areas, cities and towns healthier and livable places.
- ii) To make the cities and towns function as centres, of trade, commerce, industry and services.
- iii) To develop urban and rural areas by providing basic infrastructure and municipal services and improving housing and living conditions.
- iv) To promote better health, sanitation, environment and social welfare activities in the urban and rural areas.

- v) To develop residential, commercial, industrial employment potentials of cities and towns.
- vi) To improve transport and communication systems.
- vii) To consolidate and improve the organizational and administrative structures of municipal and rural service sectors.

The main institutional machinery for urban development in the Kingdom is the Ministry of Municipal and Rural Affairs. The regional offices of the Ministry are responsible for the preparation of plans for urban growth and development and for the implementation of specific development projects. Based on the above stated urban development guidelines, the development objectives of the Municipal Sector during the Fifth Plan and beyond are given as follows:

- i) To provide an equitable and economic distribution of basic municipal infrastructure and services to all regions;
- ii) To provide advanced municipal infrastructure to localities with realistic economic development potential;
- iii) To further improve the economic efficiency of municipal infrastructure and services;
- iv) To secure an adequate spatial development of localities through the coordination of activities between all relevant governmental agencies and local administrations (Ministry of Planning 1990, p. 376).

## **Distribution Of Urban Centres**

Urban growth in Saudi Arabia has created spatial imbalance because of the country's vastness, widely dispersed regions and high level of urbanization. The government of Saudi Arabia adopted spatial planning to overcome spatial problems and regional imbalance in the overall development process. The national development plans aimed at regional and urban development throughout the country for achieving the objectives of inter-regional, rural-urban and intra-urban equity of socio-economic development. Studies have revealed that major growth has taken place in regional centres, which cover all Saudi *emirates* namely, Makkah, Madinah, Riyadh, Al-Qassim, Al-Baha, Qatif, Al-Hassa, Najran, Asir, Jizan, Al-Qurayyat, Northern Borders, Tabuk, Al-Jouf, and Hail. The main reason for this widespread growth is that in each province a number of growth centres were targeted for infrastructure development investments.

By size and diversity, Saudi Arabia covers an area of 2.25 million Km<sup>2</sup>. Its

## Urban Development Overview

mid-1992 population stands at 16.92 million persons. Urban population accounts for about 77% of the total population, which is easily surpassable with continuous migratory flow from rural areas to urban centres. Saudi Arabia has, according to the Ministry of Municipal and Rural Affairs Statistics, about 144 municipalities and village cluster centres. They are distributed as follows:

*Table 9  
Distribution of Municipalities and Village Cluster Centres  
by Geographic Division*

Geographic Divisions	Major Municipality	Other Municipalities	Village Cluster	Total
Riyadh	1	28	6	35
Western	4	12	6	22
Southern	-	10	4	14
Al-Qassim	-	9	7	16
Eastern	1	5	2	8
Northern Border	-	3	1	4
Hail	-	4	7	11
Gizan	-	6	4	10
Tabuk	-	5	1	6
Najran	-	2	1	3
Al-Baha	-	4	2	6
Municipalities & Cluster Centers Reporting Directly to the Ministry		1	2	9
<b>Total</b>	<b>6</b>	<b>95</b>	<b>43</b>	<b>144</b>

*Source: Ministry of Municipal and Rural Affairs/  
Deputy Ministry for Town Planning and Programming, 1992.*

There are 6 major municipalities namely Makkah, Madinah, Riyadh, Jeddah, Dammam and Taif (Taif under the direct jurisdiction of the Minister). There are 95 other municipalities of different grades throughout Saudi Arabia. Because of low population density, the village cluster centre system was created to cater for rural settlements' needs collectively. There are now 43 village cluster centres (VCC) two of which report directly to the Ministry. <sup>[1]</sup>

## Urban Development Planning

The Ministry of Planning during the Second Five-Year Development Plan had

undertaken economic studies for the main planning regions of the country. The Ministry of Municipal and Rural Affairs began to formulate Master and Action Area Plans for major cities, and to implement VCC development programme for all rural areas. Detailed studies and plans for major urban centres i.e., Riyadh, Jeddah, Dammam, Taif and Abha were made in the 1970s. These concentrated efforts continued throughout the Third Plan. Some modifications in the Growth centre concept was introduced and the emphasis was to coordinate services at all regional levels.

By the end of the Third Development Plan, studies for the comprehensive regional development for Al-Baha, Al-Qassim, Hail, and Tabuk were completed. The fourteen administrative provinces of Saudi Arabia were surveyed to determine the present situation, and to formulate regional growth strategies based on their potentials.

The programmes in the Fifth Five Year Development Plans aim to expand and improve the urban growth concept at the regional and national levels. The Ministry of Municipal and Rural Affairs is in the process of finalizing a national spatial strategy and formulation of structure plans for urban areas in the Kingdom. The urban structure plans are intended to implement the national spatial strategy and urban growth limit studies undertaken by the Ministry. The Ministry of Planning is undertaking similar economic studies to achieve regional growth and integration.

## **Conclusions**

Contemporary urban development took place primarily around oil production and distribution centres. Population moved from rural and desert settlements to these urban areas in successive waves. With more resources becoming available, the urban process began to diffuse in various directions. Old urban centres were invaded by new economic activities. A new course in urbanization was marked with the spread of economic activities beyond the oil production centres. With growing urban investments for the development of municipal, health, educational and transportation facilities, a new wave of rural migration swept over cities throughout the Country. The modern urbanization process went through various stages with the successive Five-Year Development Plans encouraging inter-urban migration of population. The level of urbanization and related development in the two holy cities and Jeddah are accentuated through a continuous process of seasonal migration of people for religious purpose.

A review of the national development plans reveals the distinct stages in the



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urban development based on the urban development objectives of the Five Year Development Plans. The first stage of modern urbanization ran concurrently with the First Five-Year Development Plan, which emphasized national and urban infrastructural developments. The second stage involved strategic and comprehensive physical development throughout the Kingdom. The Second Five-Year Development Plan continued to give priorities to infrastructure, particularly in the building and construction sectors. The third stage was marked with the Third Five-Year Development Plan, the strategy of which was targeted at completion of infrastructure and development of human resources. The fourth stage which involved comprehensive regional planning as reflected in the Fourth Five-Year Development Plan aimed to integrate economic and social development all over the Kingdom.

A tempo of urban development is witnessed throughout Saudi Arabia, the major objective of which is to achieve balanced rural-urban development particularly in the provision of infrastructure and services. The village cluster centres, the General and Local Development Committees are envisaged to be the instruments of development of rural areas. They are also designed to involve public participation in the community development projects which will eventually become an integrated part of the national development planning and development process in the Kingdom.

### **Note**

[1] A Village Cluster Center in Saudi Arabia functions as a Municipality for a number of villages. It is a corporate body in term of status with some accountability to the Ministry of Municipal and Rural Affairs.

# 4

## Urban Social Structure

Abdullah H M Al Khalifah

The aim of this chapter is to investigate the social dimensions of urban development in Saudi Arabia. To provide a thorough understanding of this issue, we will first review the related human ecological and sociological literature as a means of providing theoretical perspectives through which this issue can be understood. Second, we will take into account the urbanization trends in Saudi Arabia. This will be undertaken partially because the patterns of social dimensions of urban development in Saudi Arabia are almost different from those observed elsewhere. The fact that Saudi Arabian rural to urban transition which took place within a considerably short period has in many ways speeded up the process of urban change, which transformed most of urban areas in the Kingdom from preindustrial to industrial form. Finally, quantitative and qualitative examination of the major urban areas in the Kingdom will be presented through which various dimensions of social structure of cities in Saudi Arabia can be delineated and singled out.

### Theoretical Background

The social structure of urban areas has been the subject matter of both urban sociology and human ecology. In these fields, certain issues regarding the social, cultural, and economic variations of spatial sub-units of cities are investigated, particularly issues that are concerned with the ways spatial units of cities (i.e., zones, neighborhoods, census tracts etc.) are structured not only along the lines of economic groups but also structured along place of origin, social and cultural lines.

#### Models Of Internal Urban Social Structure

Perhaps the earliest attempt to deal with internal social and cultural structure of cities goes back to the work of Kol (1841) in which he viewed urban structure vertically as a series of layers; which translate into "arches" of homogeneous social structure, so that the economic and social importance of the population declines as one moves out of the centre of the city, with the exemption that some outer rings might contain a wealthy population because of a growing sympathy for the country side (Berry & Kasarda, 1977: 108).

## *Urban Social Structure*

Later this pattern of inverse relationship between distance from city centre and socio-economic status is seen (and found) to characterize the internal form of cities in pre-industrial or traditional societies (Sjoberg, 1960, Chatterjee, 1960, Al-Sheikh, 1982).

In contrast to this type of pre-industrial city is the internal structure of modern cities in which socio-economic status of population is found to vary positively with distance from the city centre. In the U.S.A, during the early decades of this century, Chicago urban sociologists, namely Burgess and his associates, developed what has become known as "concentric zone model" (Burgess, 1925). According to this model, city growth and development is viewed as an outcome of the process of expansion that starts from city centre and moves outward to the periphery. This outward movement takes the form of succession zones. This process is both activated and accelerated by high rates of rural to urban migrants and foreign expatriates who, in most parts, find city centre and near by surrounding areas desirable places to reside due to high work opportunity and low rental cost. Because of the concentration of migrants in inner city, the middle and high classes find it inescapable to move to the outer zones to escape the undesirable social condition and deterioration caused by the concentration of migrants in the city centre. This outward movement of middle and high income groups is facilitated by the development of modern transportation and communication technology, which made it possible to live far from city centre while continuing to work at the city centre.

The concentric zone view of internal social structure of cities was later challenged by Hoyt (1939) who offered an alternative view of city structure. According to Hoyt, the internal structure of city does not consist of mere successive zones surrounding the centre of the city, and that the status level of neighborhood does not vary directly with distance from the centre. Rather, he asserted that high status and low status neighborhoods are distributed among distinct sub-areas of the city and their distribution does not vary concentrically about the city centre; rather their distribution takes on sectorial order. Competition for choice location is the driving force behind urban sectorial expansion; soon when a sector develops as a high (or low) socio-economic status area, the sector will tend to preserve that character for a long time to come, thereby, creating segregated sectors along socio-economic lines. Furthermore, these sectors, regardless of their socio-economic level, tend to extend radially from the centre toward the periphery. According to the sectorial model, positive correlation between distance from city centre and neighborhood social status can be taken for granted to a large degree (Hawley, 1950: 384; Frisbie & Kasarda, 1988: 631).

Harris and Ullman (1945) introduces the multiple nuclei model. Instead of



having a single centre, as asserted by concentric zone model, cities are seen to include many centres some of which existed from the very origins of the city while others have developed later. According to this theory, each modern city has one major nucleus around which most of the administrative, commercial and service activities surround. In addition, there are several other specialized nuclei, such as a nucleus for wholesale and light industries, which locate not far from the main nucleus, and other nucleus for heavy industries, which locate at the periphery and so on. Residential areas of varying socio-economic status are distributed around these nuclei. "This theory reflects the reality of different location needs, the fact that certain functions are ancillary and supportive of each other while other activities are mutually detrimental, and the differential ability to pay the cost of location at desirable sites" (Frisbie & Kasarda, 1988: 631).

Even though these three models appear to be different from each other in their emphasis, empirical evidences derived from both social area analysis and factorial ecology have shown that "the three models are additive contributors to the total socio-economic structuring of city neighborhoods" (Berry & Kasarda, 1977: 89). To illustrate this point, we turn now to social area analysis and factorial ecology to document how the evidences derived from them captured the merit of the three theoretical models of internal urban structure.

### **Social Area Analysis And Factorial Ecology**

Social area analysis goes back to the work of Shevky and his associates in their studies of urban structure of Los Angeles and San Francisco (Shevky, William and Bill, 1949, 1955). Urban structure is viewed - according to these authors - as a consequence of societal modernization reflected via increase in the intensity of social relationship, in the degree of division of labor, and in the complexity of organizations. "Embedded in these macro level changes were three processes; changes in the arrangement of occupation, changes in the way of living and redistribution of the population" (Shevky & Bill, 1961: 227).

In a very general sense, social area analysis is based on the premise that, the social and economic differentiation at individual or familial level, brought about by macro level changes, is reflected to a large degree in space. That is to say, in urban areas, which normally host large size of population with different social cultural and economic status (or backgrounds), their sub-areas (such as zones, census tracts, or neighborhoods) tend to be divided along these lines and in a manner that absorbs these variations. Shevky and his associates employ three constructs to tap urban social differentiation namely (1) economic status measured by occupations, education, rent, income, housing quality and density of dwelling, (2) family status or



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urbanization measured by fertility ratio, proportion of single family detached homes, proportion of female in the labor force and (3) ethnic status or segregation measured by proportion of non white and proportion of foreign born. Their analyses of Los Angeles and San Francisco show that the three constructs tap most of the variation among census tracts of the two cities. Subsequent investigations of other non-Southern American cities and Scandinavian cities show the generality of Shevky and his Associates' model to these cities; that is, the social area analysis of each city shows that economic, family and ethnic statuses represent distinct and significant spatial dimensions of urban social structure. In other cities including U.S. Southern cities and cities in developing countries that are subjected to social area analysis, the three dimensions failed to separate from each other. For example, variables indexing "economic status" and "family status" dimensions loaded in one rather than two dimensions for U.S. Southern cities and Cairo. Also, Social area analysis of African cities of Accra and Abidjan show, that variables, indexing family status, are strongly associated with variables indexing ethnic status. The failure for the three dimensions to separate independently from each other is attributed either to methodological problems or to lower level of modernization (Abu-Lughod, 1969, Van Arsdol, et.al., 1958; McElrath, 1968).

It is worth mentioning that, the three dimensions defined by Shevky et. al. (1949, 1955, 1961) appeared to tap urban spatial structure conform closely to the three classical models of urban growth and form. That is to say that, the first dimension, namely socio-economic differentiation, is shown through social area analysis to be distributed in a sectorial fashion (Hoyt, 1939), family status differentiation confirms roughly to concentric zone model (Burgess, 1925), and finally, the ethnic status differentiations follow multi-nucleated pattern in space (Berry & Kasarda, 1977).

The term factorial ecology is used to denote urban studies that employ factorial analysis - a multi variate statistical technique - to investigate urban internal social structure. Because of the fact that factorial ecology is an out growth of social area analysis, some similarities and differences exist between the two approaches. Both utilize aggregate spatial unit of analysis including census tracts, zone or neighborhoods. They also employ factor analysis to uncover the socio-economic and ethnic and cultural dimensions that underlie the spatial social structure of the urban community. The two approaches, however, differ in some methodological considerations; while social area analysis is deductive, factorial ecology on the contrary is inductive. Furthermore, the number of variables utilized in factorial ecology is quite larger than in the case of social area analysis.

Factorial ecology has been employed across societies. At least four patterns

have emerged out of numerous cross-national and societal factorial investigations (Herbert, 1972). These patterns are as follows:

(1) The American Cities:

Factorial ecology of American cities has shown consistent pattern in most parts: that is, in each case study, three dimensions indexing socio-economic status, family status, and ethnic status, which account for most of the variance among census tracts are discovered. The exception of this general pattern is those studies of some Southern U.S.A cities in which variables indexing family status and those indexing ethnic status failed to load independently from each other.

(2) European Cities:

For these cities - excluding British cities - factorial ecology analysis shows only two dimensions namely socio-economic status and family status to account for most of the variation among census tracts of these cities. The absence of the third "ethnic status" dimension is an indication of a high degree of ethnic homogeneity in these cities.

(3) British Cities:

Factorial ecology of British cities reveals closer ecological pattern to American cities pattern in that three dimensions reflecting socio-economic status, family status and ethnic status are shown to underlie the internal urban social structure of these cities. However, the British pattern is different from the American pattern only in the type of variables reflecting ethnic status. In the case of British cities, ethnic dimension is reflected by variables measuring foreign origin and migration status rather than - as in the case of American cities - racial national status.

(4) Cities of the Developing Countries:

The factorial ecology analysis of cities in the developing world did not yield a consistent pattern. In some studies, variables indexing socio-economic status and ethnic status loaded in one dimension as shown by Bose studies of Calcutta, India (1965, 1968). Other studies, such as Ffrench & Hill (1971) and Al-Ankary (1983) in their factorial ecology studies of Kuwait city found either different dimensions than these discovered by earlier studies (Ffrench & Hill, 1972) or found more than one factor for each of the three dimensions observed in American cities (Al-Ankary, 1983).

## **The Rural To Urban Transitional Process Of Saudi Society**

It is quite conceivable to say that urbanization in Saudi Arabia is somewhat a new phenomenon. During the early stages of the development of Saudi Arabia as a social and political system (1901-1930), the population of the Kingdom was predominantly nomads - more than two thirds of the total (Twitchell, 1958: 139). The small non-nomadic segment of the population lived mostly in small towns, villages and hamlets.

In fact, with the emergence of Saudi Arabia as a stable political system, coupled with the discovery of oil in the early 1930s, nomadic way of life began to experience major changes as a result of the government policy concerning settling down large portion of nomadic population, a major factor that led to the establishment of new villages and hamlets to house this type of population. Cities and villages that already existed started, also, to grow as a result of both internal migration from rural areas and natural growth brought about by the improvement of health conditions.

Not until the last three decades, however, when the process of urbanization in Saudi Arabia has reached unprecedented rate. That is, the movement of people from rural to urban areas has been phenomenal, particularly throughout the seventies. Cities and towns in all regions have expanded with varying degrees from small agglomerations consisting of some thousands of people to large urban centres hosting tens or hundreds of thousands of inhabitants; the size of Riyadh and Jeddah - for instance - grew from 30,000 some fifty years ago to more than a million during the 1980s (Barth and Quiel 1987). According to the 1992 census the population of Riyadh and Jeddah is 2.78 million and 2.05 million respectively. This remarkable growth is mainly due to internal (mostly rural to urban) migration and expatriates working in the huge infrastructural and development projects.

### **Urban Population Growth**

As indicated previously, urbanization in Saudi Arabia is quite a new phenomenon. Before 1970, the largest segment of the population lived in sedentary, semi-nomadic, and nomadic areas. After 1970, however, population distribution experienced a new trend, that is the shift of population from rural to urban areas. In fact, it can be argued that the rapid growth of Saudi Arabian population size witnessed during the 1950-90 period has occurred mostly in urban areas. Urban population increased from 5.9% in 1950 to 48.7% in 1970, the growth of urban population continued at a high rate throughout the seventies and eighties. In 1992 77.2% of the total population and 68.5% of Saudi population lived in urban areas (settle-



ments with more than 2400 population). Also it can be implied from U.N. data (U.N., 1982: 322) that while population size of the country has increased over time, particularly during 1950-1975, most of the growth has taken place in urban areas whereas rural areas are showing negative growth rate over time. While the aggregate rate of urban population growth has varied between 58.1% during 1950-1960 period, and 21.1% during 1980-1985 period, rural to urban growth rate varied between 10.2% in 1950-1960 to 0.9% in 1985 - 1990 periods. The reason for this is not only due to both internal and international migration to urban areas, but it is also due to the re-classification of some of the rural areas into urban centres. Beside, most of the rural areas located near the cities have been absorbed by the ever growing urban centres (Al-Khalifah & Frisbie, 1989: 15-22). In addition, new towns and cities are built and became leading urban areas in absorbing immigrants.

### **Sedentarization Process And Rural To Urban Transition**

As stated previously, only small segments of Saudi population were living in urban areas throughout the beginning of this century. Other small segments of the population were living in villages and small towns, but the majority of Saudi population were living in the desert as nomads.

The sedentarization of Saudi *bedouin* population has taken different forms and occurred at different times. The most important form - for the purpose of this study - is the sedentarization of *bedouin* population that took place voluntarily near major urban areas in the Kingdom.

This form is what is referred to as the voluntary or spontaneous *bedouin* settlement, which took place as a result of the free will of the *bedouins* to settle without any direct influence of the government. Some authors have argued (Al-Abbadi, 1981: 211) that such type of settlements was found to be more successful than the *bedouin* settlements induced by the government due to the fact the *bedouin* population found it necessary on their own to integrate with the wider urban society.

This type of *bedouin* settlements, took place mainly after 1930 as a result of *bedouin* migration from early *Hijaz*. Number of factors have contributed to the success of this type of *bedouin* settlement (Al-Abbadi, 1981: 211-12) such as the severe drought during the 1950s and 1960s and the termination of the *hema* (tribal territory) system, which encouraged *bedouin* to settle spontaneously. Furthermore, the decline of political power of the tribe and the rise of a unified national government power were major determinants of settling the *bedouins* spontaneously. The discovery of oil has contributed indirectly to the settling of *bedouin* population



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near by the oil centres of Eastern province. Cultural factors such as the shift from camel rearing to sheep rearing - brought about by the declining importance of camel as a mode of transportation had led the *bedouins* to abandon nomadism and move to nearby urban areas where they can have access to urban economic opportunities while maintaining their tribal social identity.

The spontaneous *bedouin* settlements took place both in rural and urban areas. The settlement taking place in rural areas was established by migrants from early *hijar*. Shamekh (1975: 171) stated that "unlike the early *hijar*, this settlement process began primarily for economic reasons and sedentary life amenities rather than a religious motivation." Likewise, urban areas constitute a pull factor for the *bedouin* who abandoned nomadism and chose to settle near by urban areas in quarters called *hilar* (pl. of *Hilah*). It is important to note that in most Saudi cities, particularly the large urban areas such as Riyadh, Jeddah, Makkah and cities in the Eastern province, there are quarters located at the peripheries of these cities inhabited mainly by various tribes (Shamekh, 1975: 219-220). Some of these *hilar* or quarters are named after the tribes of the respective *bedouin* settlers such as Hay or Hilat Alonzo in Riyadh and Hay Adwaser in Dammam and so on. Later, the urban expansion of Saudi cities during the second and third development plans (1975-1985) absorbed most of these quarters.

The causes and consequences of changes, occurred among nomadic population, which led them finally to settle in urban areas, have an impact upon a range of urban social phenomena including family structure, marriage, cultural values, privacy, social interaction, housing preference, education and employment structure. Due to the inclination of *bedouin* to keep close contact with their tribe in the urban environment, which in turn, puts limit on the degree of their interaction with others, *bedouin* family structure, their cultural values and marriage pattern have not undergone any significant change. As in the days of nomadism, it is highly expected that *bedouins* still favor large family size which is a result of many cultural and social factors, such as early age at marriage and the prevalence of polygamy coupled with lower level of education and the expected absence of female labor force participation. The notion of tribalism in urban areas still has strong social significance. People are characterized in some categories according to their tribal background (such as tribal versus non tribal status, meaning those with no tribal origin). Inter-marriage among persons from different tribal status is still very limited and unwelcome.

As of their socio-economic status, it is well documented that illiteracy among *bedouins* is of high level for both sexes (Cole, 1987: 295). This is understandable in the light of the fact that adequate level of modern educational institutions were not

available to *bedouins* in their place of origin until the development planning period, which made them lag behind the rural and urban population in this respect. This situation puts limit on the kind of jobs that suits the social and economic needs of the *bedouins* in the urban environment. Military sector is found largely by the *bedouins* as an honorable sector to seek employment.

With regard to housing preference, it can be stated that, having the same social and tribal background and facing the same economic and social adjustment problems in urban areas, *bedouins* find it important to live closer to each other. The spatial structure of most Saudi cities has been influenced by this process; certain neighborhoods and sections of cities are known for distinct tribal clustering. This situation has produced socially and culturally segregated neighborhoods along the place of origin and tribal lines. As a consequence, social interaction among people living in segregated areas is insignificant.

## **Social Stratification Of Urban Population**

Since urban areas in the Kingdom have emerged over a considerable short period, it is important to examine the place of origin components of urban population. This will help us to understand fully how the internal urban structure of Saudi Arabian cities responds clearly to the national and place of origin backgrounds of their population.

To illustrate, the population of Saudi Arabian cities is composed of three distinguished elements namely traditional urbanites, internal migrants and foreigners. Traditional urbanites, as well as foreign population, particularly up to late 1970s, constituted small proportions of the total urban population. Internal - mainly rural and *bedouin* - migrants, on the other hand, represented the largest proportion particularly before 1985 periods. For example, Table 10 shows the percentage of heads of households born or raised in Riyadh shared 15% and 20.8% in 1968 and 1985 respectively. Non-Saudi heads of households formed 22.6% and 31.10% respectively for the same periods. On the contrary, the percentage of internal migrant household heads varied between 62.4% and 48.1% in 1968 and 1985. As to the Riyadh total population, Table 11 shows the percentages of Saudi born or raised in Riyadh has decreased, where as the percentages of foreign populations has increased over time. For those born or raised in Riyadh, their proportion decreased from 46% in 1968 to 19.5% and 25.0% in 1977 and 1986 respectively. On the contrary, foreign population in Riyadh increased from 15.0% and 18.0% in 1968 and 1977 to 35% in 1992. The proportion of Saudi migrants residing in

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Riyadh constituted the largest proportion in both 1968 and 1977 but came next to foreign population in 1986.

*Table 10*  
*Percent Distribution of Heads of Households in Riyadh*  
*by Migration Status and Data Source for 1986 and 1985*

Data Source and Date	Migration Status			Total
	Born or Raised in	Internal Migrants	Non-Saudi (Foreign)	
Doxiadis 1968	15.00	62.40	22.60	100.00
Al-Khalifah 1411 H**	20.80	48.10	31.10	100.00

\* *Doxiadis Associates (1968), Riyadh existing conditions,*  
*Riyadh: Ministry of Interior*

\*\* *Al Khalifah (1991, P:134) for further details.*

*Table 11*  
*Percent Distribution of Riyadh Population*  
*by Migration Status and Data Source*

Data Source and Date	Migration Status			Total
	Born or Raised in Riyadh	Internal Migrants	Non-Saudi (Foreign)	
Doxiadis, 1968	46.00	39.00	15.00	100.00
Population Census, 1974	-	-	18.00	100.00
Scet Survey, 1977	19.50	50.00	28.00	100.00
ADA, 1987	25.00	36.00	39.00	100.00

*Note: The 1992 census shows the percentage of non-Saudis*  
*in Riyadh City as 35.2%.*

The above urban characteristics of Riyadh city apply, by and large, to other cities in the Kingdom. Table 12 shows the percentage distribution of some selected cities (on which data are available) by nationality and migration status in 1972. The proportion of urban population born in the same city varies sharply from a low of 4%, 7.8%, 11.8% for the cities of Al-Khobar, Dammam, and Jeddah respectively to a high of 89.3%, 86.1%, 78.9%, 72.7% and 41.4% for the cities of Mobaraz, Qatif, Hufuf, Yanbu and Makkah. Non-Saudi population constitutes considerable large proportion in the cities of Jeddah (42.1%), Makkah (26%), and Taif (17.3%). The present situation for these cities should exhibit larger variation along these dimensions than observed in 1972. Undoubtedly, the latest 1992 Saudi census figure indicates that foreign population in Saudi cities has grown at a faster rate than the growth rate of internal migration. Consequently, the internal urban structure of most major Saudi cities will undoubtedly reflect, to great degrees, variations in spatial structures in line with the social differentiation based on nationality and place of origin.

*Table 12*  
*Percent Distribution of Population by Nationality and Migration*  
*Status in Some Selected Cities, 1974, 1992*

Cities	Nationality Status in 1974		Migration Status in 1974		Nationality Status in 1992 <sup>(2)</sup>	
	Saudis	Non-Saudis	Born or Raised in the Same City	Migrants	Saudis	Non-Saudis
Jeddah	57.9	42.1	11.8	88.2	48.83	51.17
Makkah	73.4	26.6	41.4	58.6	56.98	43.02
Madīnah	82.7	17.3	35.8	64.2	71.13	28.87
Taif	75.0	25.0	26.1	83.9	77.55	22.45
Yanbu	93.6	6.4	72.7	27.3	72.91	27.09
Hufuf	-	-	78.9	21.1	82.18	17.82
Mobarez	94.5	5.5	89.3	10.7	88.88	11.12
Dammam	-	-	7.8	92.2	62.93	37.07
Al-Khobar	-	-	4.0	96.0	39.41	60.59
Qatif	-	-	86.1	13.9	87.09	12.91

*Source: (1) Grill, N.C. (1984), Urbanization in the Arabian Peninsula. England: University of Durham, P:39 (translated by K. Ankary).  
(2) Central Statistical Organization, 1992 Population Census.*



### **Regional Influence In Urban Social Stratification**

It can be inferred from the preceding discussion that prior to 1950s, the majority of population settlements in Saudi Arabia were rural. During 1940s, only about 10 urban areas existed; most of them are located in the Western part of the country. Makkah, during this period, was the largest urban centre with 80,000 inhabitants. Riyadh's population size amounted only to 30,000 people, the same size was also true for both Jeddah and Hufuf cities. The remaining urban areas housed populations that ranged from 20,000 as in the case of Madinah and Buraidah to 5000 as in the city of Taif. Since 1950s, - however - urban areas have grown both in number and size. (It should be kept in mind here that the Central Department of Statistics in Saudi Arabia uses the term 'Urban Areas' to refer mostly to these settlements with municipalities, Makki, 1987: 68). Furthermore, urban areas increased from 10 cities in 1940 to 82 cities in 1974 and to 102 cities in 1987 (Al-Khalifah, 1993). The size of urban areas increased as well. Until 1940, no urban areas in the range of 100,000- 499,999 existed, but in 1950, one of these urban areas namely, Makkah, reached 100,000. Later, the number of cities falling in this category increased to 3 cities in 1960, 5 cities in 1970 and 9 cities in both 1974 and 1987. The growth of Saudi cities beyond this range was witnessed first in 1974; two cities namely Riyadh and Jeddah had a population in the 500,000 - 999,999 range. In 1987, only the city of Makkah had a population in this size bracket. This is due to the fact that Riyadh and Jeddah which used to be in this category moved to a higher city size order in 1987; the population size of each of these two cities exceeded one million (Davis 1969: 102; C.D.S.,1974; MOMRA, 1987).

With regard to the regional distribution of cities, it can be stated that Central, Western and Eastern Provinces have more urban areas than other provinces, particularly in 1974, and 1987 to a certain degree. Over the 1974, and 1987 period, most provinces, moreover, experienced a rise in their urban areas particularly the Southern and the Northern Province, which lagged behind other regions in the number of urban areas in 1974. The Eastern Province is shown to have fewer urban areas in 1987 than in 1974; this decrease is mainly due to variation in the classification of urban areas between the two periods (Al-Khalifah, 1993).

Regional variation regarding the size and distribution of urban areas can be seen more clearly in the pattern of their urban primacy. At the national level, studies have shown Saudi Arabia to exhibit a low tendency toward urban primacy. Clark (1971: 157), Al-Ankary (1987: 92), and Makki (1987: 72) indicate the absence of clear trend toward urban primacy in Saudi Arabia where a triple-city pattern may be noted. Over the 1962-1974 periods, the four city index - one of the commonly used measures of urban primacy - increased slightly from 0.47 in 1962 to

0.59 in 1974 (Makki, 1987), but decreased over the 1974-1987 period from 0.59 in 1974 to 0.56 in 1987 (Al-Hathloul & Edadan, 1992a: 7). At the regional level, urban primacy is shown by some studies to vary considerably; urban primacy of Central Province is found to be the highest among Saudi Arabian Provinces in both 1974, 1987 amounting to 5.31 and 4.71 respectively. The values of the urban primacy index for the other regions fall below unity for both periods demonstrating the fact that the urban structure of these regions is more balanced (Al-Hathloul & Edadan, 1992a). It is shown in this same study as a matter of fact that while urban primacy in Central, Eastern and Northern Provinces is decreasing over time, it is increasing in both Southern and Western Provinces.<sup>[1]</sup>

The fact that urban structure at both national and regional levels is more balanced and exhibits a low tendency toward urban primacy means that the population of each city is drawn, to large degree, from within its respective region and adjoining regions. Internal ecological structure of each city, therefore, is expected to be dimensioned along a number of social lines including place of origin, tribe, and other significant social statuses specific to the immediate closeby regions.

It should be noticed that the transformation of system of Saudi cities from staggered to primate and finally to multi-polar has influenced the social structure of Saudi cities. The first transition, that is from staggered to primate, has witnessed the influx of rural migrants in large number to few urban cities namely Riyadh and Jeddah as being the two primate cities in the Kingdom up to late 1970s. At this stage, many urban problems took place in these cities including high population density, streets congestions, poor housing. Slum areas have spread around the city to house the internal migrants particularly from nomadic areas. These are the outcomes of the rush to development policies and the concentration of development programmes during the 1970-1980 period in the large two cities, Riyadh and Jeddah. Thus, these two cities particularly, became the target of internal migration from all over the kingdom. Later, the development programmes have been directed toward other urban and rural areas in general (Al-Khalifah, 1993). Eventually, this has resulted lately in a multi-polar system of cities, which enhanced the spatial division of labor among cities, a process by which migration to the largest urban centre is controlled due to the availability of jobs in these newly developed urban areas. Thus, the effect of internal migration, on the largest cities in the kingdom will be of minimum magnitude, which is quite contrary to the primate stage of urban growth.

Having discussed the major theoretical perspectives, regarding urban social dimensions, and urban characteristics in Saudi Arabia, we now turn our attention to the social spatial structure of Saudi cities.

## **The Social Spatial Structure Of Saudi Cities: Past And Present**

Prior to 1950 only few urban areas existed in Saudi Arabia namely Riyadh, Makkah, Madinah, Jeddah, Taif and Hufuf. The ecological structure of pre-industrial city specified by Sjoberg (1960) applied, in many ways, to these cities some 40 years ago. Pre-industrial cities - according to Sjoberg - share common characteristics. They all, or most of them, have small population size, mostly less than 10,000 or 50,000 inhabitants, but few had over 100,000 inhabitants. This aspect made it possible for pre-industrial cities to be surrounded by walls as a means of protection from the invasion of hostile groups. In terms of spatial differentiation according to land use patterns and socio-economic criteria, Sjoberg views pre-industrial cities as dominant in contrast with the industrial city. That is, the centre of pre-industrial city exercises a dominating role over the remaining parts of the city. Religious and governmental institutions are located in the hub of the city. Adjacent to these institutions are the residential areas of the elites. The socio-economic status of the pre-industrial city population decreases as one move from the centre toward the city periphery where lower and the outcast classes reside. Furthermore, ethnic groups live independently from the rest in isolated quarters. Social mobility is very low due to the inaccessibility of education to the lower classes.

As to land use pattern, pre-industrial cities exhibit less spatial specialization; mixed land use is the phenomenon. Places of residents serve, too, as the places of work. Also, each occupational group is more likely to live and work in specific street or quarter, most of these areas are named after the same occupation (Sjoberg, 1960: 91-92, 323-324).

The above characteristics of pre-industrial city, outlined by Sjoberg, do apply, to a great degree, to most Saudi Arabian cities some decades ago; the population of each of these cities did not exceed 30,000 inhabitants prior to 1950 with the exception of the city of Makkah which housed at that time a population of 80,000. Most of them, such as Riyadh, Jeddah and Hufuf, were surrounded by walls. Government institutions along with the central mosque and the residences of top officials were located in the centre of the city, whereas the residences of those with low socio-economic status were located at a longer distance from the hub of the cities. Commercial industrial and residential uses of land were mixed. In most of these cities, prior to 1970, certain streets and quarters were named after the kind of economic functions performed by residents of the same street and quarters. Social as well as geographic mobility were of low level due to traditional education, and modes of transportation and communication.



However with the rural -to- urban transformation of Saudi society, which began mainly after the oil discovery and the implementation of five year development plans (1970-1995), the morphological structure of Saudi cities responded greatly to these major changes. A number of urban policies has been implemented since then which, have transformed Saudi cities from pre-industrial to industrial cities. Most of these cities in the present time, manifest urban spatial characteristics similar to world cities. The use of modern modes of transportation and communication facilitates the expansion of cities far beyond their traditional boundaries. Housing subsidy policies, along with the distribution of free residential lands to needy citizens, speeded up the urban expansion process by making it easy for Saudi families to build convenient places for residence. Also, the municipal regulations have enhanced the degree of land use specialization by setting specific zones and certain type of streets for industrial and commercial activities.

Educational institutions, at different levels and types, which is available for all, along with the scholarship programmes, have opened the door widely for greater social and geographic mobility. Through the effect of education on occupation and income, it is now more obvious than ever before, that the modern criteria of social stratification, beside migration factor, is playing considerable role in shaping the urban structure of Saudi cities.

### **Stages of Urban Social Structure Transition**

To shed more light on the spatial structure of Saudi cities, it can be argued that the ecological structure of Saudi cities has passed through at least three stages. The first stage, one that can be termed "the pre-industrial stage" ended by early 1970. In this stage only few small and scattered urban areas existed, namely Riyadh, Makkah, Jeddah, Madinah, Taif and Hufuf. Sjoberg's description of the pre-industrial ecological structure applies - in most parts - to these cities prior to 1970. Number of studies, such as Malik (1973) Al-Sheikh (1977 & 1982) in the case of Riyadh and Al-Ankary (1977: 75) for the case of Makkah provided some evidences which substantiate this claim.

The second stage, one that can be termed "the transitional stage" took place during (1970-1985). This period corresponds to the first three five year development plans, during which many development policies in most sectors including health, education, transportation and communication etc. were implemented. It witnessed a massive rural to urban and foreign migration. In this stage, the ecological structure of Saudi cities has transformed from preindustrial to industrial spatial arrangements. That is, Saudi urban areas, during this period, began acquiring the main characteristics of industrial cities. Policies, regarding housing and free resi-



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dential lands distribution, have accelerated - in an unprecedented manner - the growth of Saudi cities. The main aspect of urban spatial structure is the clear differentiation of neighborhood in term of nationality and regional status, as a consequence of high rates of internal and expatriate migration. A number of studies conducted on some Saudi cities during this period have shown that, certain quarters or neighborhoods within these cities are attracted to certain national or regional groups (Daghistani, 1976: 149-158; Alsheikh 1977: 79; Ilam 1979: 205; Mecci, 1979; Abdulbaqie, 1986: 14; Grill, 1988: 74,78; Al-Khalifah, 1991: 132-147).

The third stage, one that can be termed the "urban stability stage" which started since 1986 until the present time. This stage is characterized by decreasing levels of rural to urban migration while the rate of expatriates continue to rise as a result of the expansion of service and private sectors. Among the major changes taking place during this stage has to do with the fact that Real Estate Development Fund (REDF) has modified its policies by putting limits on the number of housing loans given each year (REDF, 1988: 26-27; 1992: 70). This policy has put an end to the speedy expansion process in all urban areas of the Kingdom. It can be stated - therefore - that a great portion of the residential construction activities taking place through this period is not subsidized by REDF. This process, if continued, will make urban spatial differentiation according to socio-economic status more pronounced than ever before.

### **Empirical Exploration Of Urban Social Structure: A Case Of Riyadh**

#### **Research Hypotheses**

On the basis of national and international experiences reviewed above, the following hypotheses are derived:

(I) The social spatial variation among spatial sub units of the major Saudi cities is largely explained, independently, by socio-economic (or Social Rank) status, family (or Urbanization) status and ethnic (or Migration) status.

(II) The socio-economic status is expected to account for more proportion of variation among urban spatial sub units than the family status and ethnic migration status.

The test of these hypotheses should provide us with an empirical evidence that

adds to our understanding on the present situation of the social spatial dimensions of urban development in the Kingdom. It can, also, allow a comparative perspective through which the urban experience of Saudi cities can be evaluated in the light of the urban situation elsewhere.

### **Data And Method**

Due to shortages of sufficient data for most major cities, the test of the given hypotheses is limited in this research to the case of Riyadh city for which fairly reasonable data measuring the hypotheses's variables are available. These data are taken from the socio-economic and land use surveys conducted by the Arriyadh Development Authority (ADA) in 1987. 2.5% of the total city households was randomly selected through a multi-stage stratified sampling technique (ADA, 1987, :3, 6). The individual as well as the household characteristics reflecting the hypotheses are aggregated by the researcher at the *Hara* (Neighborhood) level which represents the research unit of analysis. It should be noted here that due to the nature of the multi-stage sample, only 91 *haras* were covered by the survey.

The methodological procedures regarding variables selection and operationalization utilized mostly by social area analysts is employed here for the most parts (see: Van Arsdol, et.al., 1958, Abu-Lughod, 1969, Hunter, 1971). In addition to the social area analysis variables, several variables indexing internal migration dimension are included in the analysis to allow for a fair test of the theoretical perspectives. These variables and their operational definitions are given below:

#### **a) Socio-Economic (or Social Rank) Status:**

1. % High Income (HINCOM), defined as the percentages of people with a monthly salary of 15,000 Saudi Riyals or more.
2. % Literate Males (MALITRAC), defined as the percent of literate males.
3. % Literate Females (FMLITRAC), defined as the percent of literate females.
4. % Unemployed Males (UNEMMALP), defined as the percent of unemployed males.
5. % Employed Females (EMFEMALP), defined as the percent of employed females.

#### **b) Family (or Urbanization) Status:**

1. Persons per room ratio (PERROOM), defined as (the total number of persons residing in the neighborhood / by the total number of rooms at the

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- dwelling units in the neighborhoods) X 100.
2. Sex Ratio (SEXRAT), defined as (the total males / the total females) X 100.
  3. Fertility Ratio (FERATIO), defined as (the total number of persons aged 5 years and below / the total females in the (14-50) age bracket) X 1000.
  4. % Never Married Males (SGMLP), defined as the percentages of single males.
  5. % Never Married Females (SGFMLP), defined as the percentages of single females.
  6. % Divorced Females (DVFMLP), defined as the percent of divorced females.
  7. % Divorced Males (DVMAP), defined as the percent of divorced males.
  8. % Single households (SNGHOSHP), defined as the percent of houses occupied by one person.

### **c) Ethnic (or Migration) Status:**

1. % Saudis (SAUDIP), defined as percent of Saudi population.
2. % Central Region Migrants (CENTHP), defined as the percent of heads of households migrating to Riyadh from Central Region.
3. % Northern Region Migrants (NORTHHP), defined as the percent of heads of households migrating to Riyadh from Northern Region.
4. % Western Region Migrants (WESTHP), defined as the percent of heads of households migrating to Riyadh from Western Region.
5. % Southern Region Migrants (SOUTHHP), defined as the percent of heads of households migrating to Riyadh from Southern Region.
6. % Eastern Region Migrants (EASTHP), defined as the percent of heads of households migrating to Riyadh from Eastern Region.
7. % Nomadic Region Migrants (NOMADHP), defined as the percent of heads of households migrating to Riyadh from nomadic areas.

The above variables are selected on the ground that they reflect the most noticeable and easy to measure social backgrounds of the urban population which influence their spatial stratification.

To test the research hypotheses, the so called principal component factor analysis (Varimax Orthogonal Rotation) is employed, a statistical method commonly utilized by social area analysts (SPSSX, 1986: 715-727).

The results of the analysis are shown in Table 13. The table shows that seven factors accounting for 69.5 % were extracted with each having an eigen value of

greater than unity. A close inspection of the variables loading on these factors reveals, to certain degrees, the presence of single factor for the socio-economic dimension (factor I), three factors for the family dimension (factors II, IV and V) and three factors indexing the ethnic or migration dimension (factors III, VI and VII). The first hypothesis, anticipating variation among Riyadh neighborhoods to be accounted for by three dimensions, receives, therefore, substantial support.

*Table 13*  
*Principal Components Factor Analysis of the Variables Measuring Socio-economic, Family, and Ethnic or Migration Status of Riyadh Neighborhoods, 1987*

Variables	Factors						
	I	II	III	IV	V	VI	VII
PERROOM	-0.722	0.238	0.005	-0.158	-0.138	-0.008	-0.266
SEXRAT	-0.058	0.913	-0.143	-0.005	-0.092	-0.099	-0.018
FERATI2	0.069	0.899	-0.084	0.042	0.013	-0.039	-0.015
SGMALP	0.075	0.031	-0.192	0.662	0.005	-0.198	0.258
DVMALP	0.033	-0.043	0.001	0.106	0.773	-0.016	-0.241
SGFMLP	0.085	-0.514	-0.265	0.204	0.040	-0.353	0.219
DVFMALP	-0.123	-0.053	-0.042	-0.054	0.846	0.051	0.112
MALITRAC	0.743	0.054	-0.125	-0.078	-0.139	0.023	0.139
FMLITRAC	0.658	0.024	-0.560	-0.036	-0.107	-0.156	-0.030
UNEMMALP	-0.265	-0.155	0.726	0.061	-0.009	0.028	-0.080
EMFEMALP	0.584	0.394	-0.265	-0.018	-0.091	-0.016	-0.121
SAUDIP	-0.157	-0.460	0.427	0.622	0.147	0.099	0.079
HINCOM	0.607	-0.012	0.056	-0.124	0.032	0.314	-0.108
SNGHOSH	0.075	-0.141	-0.217	-0.669	-0.013	-0.246	-0.013
CENTHP	-0.071	-0.462	-0.053	0.641	-0.026	-0.073	-0.404
NORTHHP	0.021	-0.007	0.768	0.012	-0.136	0.212	-0.054
WESTHP	0.174	-0.074	0.159	0.082	0.016	0.726	0.120
SOUTHHP	-0.481	-0.002	0.001	-0.033	0.355	0.489	0.417
EASTHP	0.102	-0.100	-0.038	0.107	-0.106	0.076	0.799
NOMADP	-0.024	-0.031	0.605	0.029	0.416	-0.458	0.258
Eigen Value	3.93	2.66	1.75	1.63	1.48	1.29	1.12
% Explained Variance	19.70	13.30	8.80	8.20	7.40	6.50	5.60

*Note: N = 91 Neighborhoods (Hara).*



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To illustrate, the first factor (I), which represents the socio-economic dimension, is indexed by variables such as males literacy, females literacy, % high income and % employed females which normally reflect socio-economic status; they loaded higher than the rest of the variables - above 0.30 - on the first factor (their loadings are 0.743, 0.658, 0.607 and 0.584 respectively). Persons per rooms ratio and % migrant from the Southern Region have high negative loadings on this factor (-0.722 and -0.481) meaning that neighborhoods with high scores on this factor have low persons per room ratio and small proportion of those migrating from the Southern Region.

The family status or urbanization dimension is represented by three factors (II, V and IV). Variables having positive high loadings on the second factor include sex ratio and fertility ratio (0.913 and 0.899 respectively). Percentage employed females has moderate positive loading (0.394). Percentage single males, % Saudi population and % migrants from Central Region all have high negative loadings (-0.514, -0.460 and -0.462 respectively).

Factor (IV) is the next factor indexing the family status. Percentage of never married males along with some of the migration variables such as % Saudi population, % Central Region migrants loaded high on this factor (0.662, 0.662, 0.641 respectively). The percentage of single household has a high negative loading (-0.622).

Factor (V) is the third factor representing family dimension; variables having high loading on this factor include % divorced females, % divorced males, % migrating from nomadic areas and % migrating from Southern Region. Their loadings are (0.846, 0.773, 0.416 and 0.355 respectively). This factor characterizes neighborhoods with a large proportion of broken families.

The third dimension, namely ethnic or migration dimension, is represented by three factors (III, VI and VII). The first factor is indexed mainly by Northern Region migrants, % unemployed males, % nomadic migrants, % Saudi population. Their loadings on this factor amount to (0.768, 0.726, 0.605 and 0.427 respectively). Female literacy - known to be among the social rank dimension variables - is the only variables with a high negative loading of (-0.560) on this factor. Clearly, this factor characterizes predominately low socio-economic status neighborhoods inhabited mainly by Northern Region and nomadic migrants.

Factor (VI) is the next factor representing the ethnic or migration dimension. It is indexed mainly by % Western Region migrants and % Southern Region migrants. Their loadings on this factor are (0.726 and 0.489 respectively). It should

be noted here that the % high income has a positive loading on this factor of (0.314). On the contrary, the % nomadic migrants has a high negative loading (-0.458). Obviously, this factor characterizes neighborhoods with a heavy concentration of high socio-economic status migrants from Western and Southern Regions.

Factor (VII) is the third factor indexing the ethnic or migration dimension. The percentage migrating from Eastern Region and % migrating from Southern Region are the only variables having high positive loadings on this factor. Their loadings amount to (0.799 and 0.417 respectively). The % migrants from Central Region has negative loading on this factor of (-0.404). In term of the explained variance, Table 13 shows the first factor which represents socio-economic status to account for 19.7 % of the explained variance which is, by far, larger than the variance accounted for by each one of the remaining factors. This evidence clearly supports the second hypothesis which anticipates variation among Riyadh neighborhoods to be explained largely by the factor indexing socio-economic dimension.

The explained variance by the remaining factors ranges from a high of 13.3 % as in the case of the second factor to a low of 5.6% as in the case of the seventh factor. As shown by numerous studies conducted elsewhere (see for example: Abu-Lughod, 1969: 207) these factors indexing family and ethnicity dimensions explained less variance than that explained by socio-economic factor.

## **Conclusions**

It is obvious from the earlier discussion that the hypotheses of this research received substantial support. While most of the variation among Riyadh neighborhoods (more than 69.5 %) was explained by factors indexing three dimensions as anticipated in our first hypothesis, the variables measuring the concepts pertaining to each dimension fail to load together in one factor representing the respective dimension, rather, they loaded in more than one factor. In addition, the result shows some social rank variables to have a high loading on family status factor. The second hypothesis receives great support since socio-economic factor is found to account for the larger explained variance than any of the other six factors.

As a matter of fact, the results of this research are different in some respects and similar, in some others, to results arrived at by urban researchers confronting the same issues.

Perhaps, the main similarity lies on the fact that this social area analysis of

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Riyadh city, like many others conducted else where, was able to explain the spatial structural differentiation of the urban community in concern. Most of the urban studies aiming at the same goals succeeded in uncovering the social spatial arrangement of their respective cities (see for example, Hunter, 1971; Abu-Lughod, 1969). Another similarity has to do with the fact that, as in the case of numerous cross-national studies, the most important factor found in this research to account for large proportion of variance, is the socio-economic factor which has an eigen value of 3.93 and an explained variance of 19.7%, which can be seen as an indication that Riyadh urban structure has become more differentiated in accordance with the modern (achievement oriented) criteria of social stratification. The immediate processes behind this outcome, lie on numerous social and political factors including the adjustment of migrants to city life, and the policies encouraging mass education and its impact on the intensity and complexity of division of labor, active government participation and the willingness of the private sector to take an active role in socio-economic development.

However, the results of this study differ in a number of respects from what have been found by urban researchers. First, the main difference has to do with the presence of three factors for both the family dimension and the ethnic or migration dimensions. Most, social area analytical studies show independent single factor for each of the designated dimension in that, variables measuring concepts of each dimension are found to load independently on single factor. On the contrary, this study indicates the presence of more than one factor for the second and the third dimensions. It should be noted here that similar findings have been arrived at by Al-Ankary (1983) in his comparative factorial ecology of Kuwait City (Kuwait) and Jacksonville (Florida). Perhaps the main reasons behind the presence of more than one factor for the second and the third dimensions has to do with number of variables used to conceptualize these dimensions; It is fairly possible in social area analysis - as it is performed through factor analysis technique - to have an outcome of this type since the number of factors extracted by factor analysis is always dependent on the number of variables utilized in the analysis. Unlike most social area analyses, in which ethnic dimension is conceptualized through one or two variables (see for example; Abu-Lughod, 1969: 207; Hunter, 1971: 429), this study has made use of seven variables indexing the nationality and migration status of the population. This, as a consequence, resulted in the extraction of more than one factor for this dimension with each factor representing the concentration of regional groups in specific neighborhoods. This undoubtedly provides an evidence for the presence of regionally based social segregation, a finding which can not be arrived at without the consideration of various variables indexing aspects of ethnicity or migration status in the analysis.



Second, it is found in this research that some of the variables reflecting socio-economic status, namely, % high income has a moderate positive loading on one of the other factors (factor VI) representing migration dimension. This suggests, to certain degree, an interdependence between socio-economic status and migration status. This can be taken as an evidence, that neighborhoods with a high concentration of families migrating from Western and Southern regions enjoy a higher socio-economic position than other neighborhoods with a heavy concentration of other regional migration groups.

Also, the study shows that some of the variables indexing socio-economic status, namely % employed females, has a moderate positive loadings on the factor (II) representing the family dimension. It should be indicated here that similar finding was arrived at by number of studies for U.S.A Southern cities and cities in developing countries such as Cairo, Egypt (Abu-Lughod, 1969). This should be taken as an evidence that the social spatial structure of Riyadh city resembles cities in developing countries and U.S Southern cities in which the spatial distribution of family patterns intertwined with some social class differentiation. That is, some of family patterns and economic patterns are spatially distributed symmetrically.

In a very general sense, these aspects of Riyadh urban ecology can be seen as a clear manifestation of the fact that social mobility in particular and modernization forces in general are still of moderate levels in Saudi society. This may account, by and large, for the failure of the three dimensions to separate completely from each other, which is quite different from that witnessed in most modern and highly urbanized societies of today.

Nevertheless, the fact that socio-economic status factor accounts for a larger proportion of variance, which is in line with the second hypothesis, is a clear evidence that the urban social structure of Riyadh city in particular and other Saudi cities in general, are responding positively to the economic differentiation of the population. This can be taken as an evidence that larger Saudi cities are experiencing the urban stability stage characterized by high intra-regional migration and the socio-economic factor dependency of the intra-urban residential mobility process.

#### **Note From The Editors**

- [1] The 1992 population census estimates indicate that the urban primacy trends at the national and regional levels are different as compared to the trends observed in the cited work. It is observed that urban primacy with the exception of Northern Province has during 1974 and 1992. The four city index at



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the national level has increased from 0.59 in 1974 to 0.77 in 1992. In spite of the urban sprawl taken place beyond the municipal areas during the last 5 years, the 1992 census data indicates the need to review the area coverage and population estimates used in the 1987 urban growth boundary studies. Since the census figures are more reliable than the population estimates of the 1987 study, we urge the readers to note that the settlement pattern in the Kingdom is becoming more polarized, contrary to the urban primacy trends indicated in the cited paper.

# 5

## The Role Of "Industrial Centres" In Spatial Development

Umar G Benna and Mohammad H Awad

The Saudi government has used industrial centres as instruments for national development. Whether officially called cities, towns, or estates, these have played varied and significant roles in national and spatial integration, in the process of de-concentration of the major metropolitan areas, and in the process of initiating technological innovation.

The concept of growth pole-growth centre is used to structure the strategy. This theory is explained by the economic and geographical concepts of *leading industries, polarization and spread effects*. The concept of *leading industries* and propulsive firms, states that at the centre of growth poles are large and innovative propulsive firms of leading industries which dominate other economic units. The main characteristics of a leading industry are that it is a relatively new and dynamic industry with an advanced level of technology by means of which it injects growth in the nation, it has a high income elasticity of demand for its products which enables it to export, and it has strong inter-industry forward and backward linkages with other sectors. Among the major characteristics of the propulsive firm are that it is relatively large, it generates significant growth impulses into the surrounding area, it has a high ability to innovate, and it belongs to a fast growing industry.

The concept of polarization suggests that the rapid growth of the leading industries induces the *polarization* of other economic units into the centres of growth, implying internal and external economies of scale. This economic polarization inevitably leads to geographic polarization, resulting in the flow of resources to, and the concentration of economic activity at, a limited number of centres within the country. The presence of agglomeration economies ensures the persistence of growth prosperity in the area even after the initial reason of such location disappears.

The *spread effects* concept states that over time the dynamic propulsive quality of the growth pole spreads outward into the pole and eventually beyond into the less developed region.

Guided by these concepts, the paper first identifies the implementation of

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industrial development strategy by means of a hierarchy of industrial centres. It then categorizes the various types of instruments used to ensure that the right quality of development is achieved. The effectiveness of the use of the industrial centres as an urban and regional planning instrument is assessed by using criterion such as generation of employment, wage income and technological innovation.

## **Industrial Development Strategy**

The central goal of the industrial development strategy of the government is to diversify the economic base of Saudi Arabia by expanding the non-oil sectors. Towards this end, a hierarchical system of industrial production centres is introduced and they are organized and classified on the basis of size, complexity and products range.

### **Hierarchy Of Industrial Production System**

The Saudi Arabian industrial production strategy which provides the basis for the classification of the industrial centres envisages to concentrate industrial activities at three levels, each focusing on specific type of industries with a purposely created public agency to promote their development.

The first level consists of primary industries, which form the leading industries in the growth pole-growth centre strategy, depending on oil and gas as well as heavy minerals as their raw materials. These hydrocarbon and heavy mineral industries are largely oriented for export. Because of their size and export-orientation, they are mainly concentrated in location close to their dominant raw material sources, from where they can easily be exported to the world and the Gulf markets. In addition, these primary industries provide raw materials for the downstream industries thereby forming the main structuring and integrating element for these industries. A careful examination of the type of industrial plants used in this sector shows that they are based on the state of the art technology. Most of the factories at this level are joint venture concerns established by foreign companies and local firms with varying proportion of ownership.

The Saudi Basic Industries Corporation (SABIC) is the propulsive firm. SABIC has provided finance and other forms of incentives to the hydrocarbon and heavy mineral industries on behalf of the government. In addition to investing its own money, SABIC has also encouraged the private sector in different parts of the Kingdom to invest in the fields of supplementary industries.

The second level consists of the secondary industries that are normally licensed by the Ministry of Industry and Electricity. Many of these industries use raw material from the primary industries and from agriculture or other sources. Their products are essentially designed for national and regional markets and are aimed at import substitution. The promotion of these industries is primarily the responsibility of the Saudi Industrial Development Fund (SIDF) with head office in Riyadh. This agency provides the financial incentives such as interest-free loans to potential investors.

The third level of industrial activities in the Kingdom is that of tertiary or service industries. These are the small scale light manufacturing units and workshops, licensed by the municipalities and registered with the Ministry of Commerce. Many of their inputs are imported raw materials or are the products of the secondary industries, but their markets are mainly the local markets. The Saudi Credit Bank assists those who are trained in government institutes and others investing their own savings with little help from the government.

These three types of industrial activities are located in purposely built centres. These centres tend to have great spatial development implications. For, as stated earlier, economic polarization has the tendency of leading to geographic polarization. The resultant effect of development of the first two levels of industrial centres is "Regional Concentration", while the effect of the third level is "Metropolitan Deconcentration."

As shown in Table 14, the centres are classified using the variables of size, degree of self containment, diversity of land uses, and the range of their products.

*Table 14*  
*Types of Industrial Centres and their Characteristics*

Characteristics	Types of Industrial Centre		
	Cities	Towns	Districts
Size			
Planned for pop. 100,000+	●	○	○
Between 25,000 to 100,000	○	●	○
Less than 25,000	○	○	●
Self Containment			
Independent	●	○	○
Satellite town	○	●	○
District	○	○	●



## Industrial Centres

Table 14, continued:

Characteristics	Types of Industrial Centre		
	Cities	Towns	Districts
Land-use Diversity			
Full range	●	○	○
Industrial-cum-residential use	○	●	○
Industry only	○	○	●
Product Range			
Production for export	●	○	○
National market products	●	●	●
Local market products	●	●	●

The size criterion refer to the population expected to live in the industrial centres or the total area planned for industrial development. A planned population of 100,000 people and over could be enough to put an industrial settlement into a "city" category while a population of between 25,000 and 100,000 or a planned industrial area of at least three-quarters of a million square meters would put a centre into the category of a "town," provided there are ancillary services and there is a management agency responsible for development. A "district" may contain any population lower than 25,000 as long as industrial production is the main activity of the area and it does not need to have a formal management agency.

The degree of self-containment criteria considers the extent to which a centre produces and consumes all its needs. This does not necessarily view an industrial centre as a close system but more on its ability to generate and maintain exchange with other centres. Thus a more self-contained centre is more likely to play a significant role in the economy and the social transformation of its region. The three categories of industrial centres considered appropriate in this case include considerable measure of independence in terms of production and consumption of goods and services. Where industrial production centres like Jubail and Yanbu enjoy considerable degree of independence, satellite towns and districts of towns do not have such latitude.

Another criterion for the classification is the diversity of land uses. The more diverse a centre is, the more efficiently it can be expected to function as a full pledged city. The Appropriate categories of diverse land use applicable in this case are full range land use types, a mixture of industrial and residential with institutional buildings and purely industrial use. A balanced community that is likely to influence local and regional development is more expected to emerge from a centre with diverse land uses.

The range of product-types is a good indicator of the strength of industrial centres. It reflects their ability to provide for themselves and for export to the immediate region and possibly abroad. The appropriate categories relevant here are heavy industrial products for export, goods for national markets and the goods and services produced for local markets. These production and distribution activities have profound influence on spatial distribution and integration of these centres.

### Classification Of Industrial Centers

Using the above criteria the main industrial production centres in the Kingdom have been grouped into "cities", "towns", and "districts". Table 15 shows the broad classification of towns and cities. Due to diverse characteristics of districts they are not included here. Each type of centre is described in more details below.

Table 15  
Size of Industrial Cities and Towns in Saudi Arabia, 1990  
(area in '000m<sup>2</sup>)

Industrial Centers	Present Area	Planned Expansion	Total Area
Jubail	N.D.	80,000	80,000
Yanbu	N.D.	8,800	8,800
Riyadh	12,451	3,786	16,237
Jeddah	8,858	3,335	12,193
Dammam	9,409	6,186	15,595
Al-Hassa	1,053	447	1,500
Al-Qassim	1,153	347	1,500
Makkah	758	-	758
Madinah	-	10,000	10,000 C
Asir (Abha)	-	3,000	3,000 D
Al-Jouf	-	3,000	3,000 S
Arar	-	2,000	2,000 S
Hail	-	2,300	2,300 D
Jizan	-	NS	NS

Source: SAMA, 1990

Notes: C = Under Construction, D = Design Stage,  
S = Site Found, NS = No Site Yet, ND = No Data

## Industrial Centres

### Industrial Cities:

Two industrial cities have been identified in the Kingdom, namely Jubail and Yanbu (Figure 9). The 1992 population of Jubail Industrial City is about 61,992 and its planned population for the year 2010 is 290,000, expected to live on a planned area of 80 sq. km. Yanbu Industrial City had 36,083 inhabitants in 1992 and the figure is expected to reach 150,000 in 2010 occupying a total area of 880 hectare (Royal Commission for Jubail and Yanbu, 1992). Both Jubail and Yanbu are twin cities because they are located adjacent to their older settlements with the same names. Even though, the new industrial cities are, completely independent of the existing settlements, there is constant interaction between the new industrial cities and the old towns. The cities enjoy a considerable degree of self-containment and greater resources to influence the tempo of development of the immediate region.

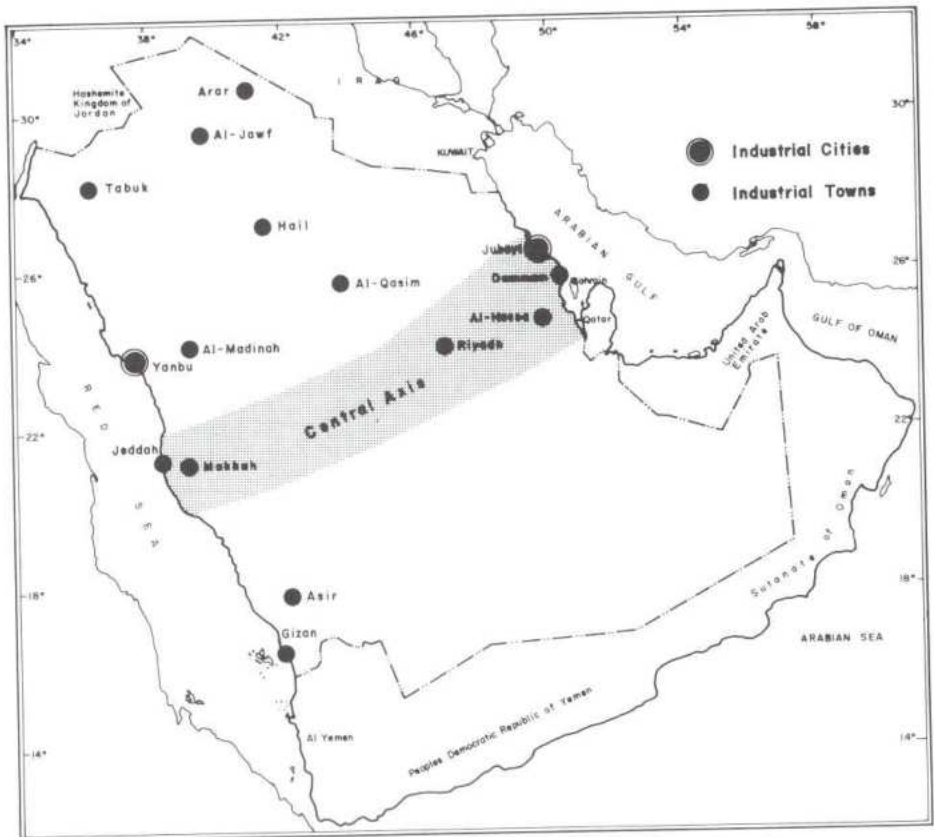


Figure 9: Kingdom of Saudi Arabia - Location of Industrial Centres

Concerning the diversity of their land uses and product range, both Jubail and Yanbu are exemplary to other industrial centres in the Kingdom. They have full range of planned land uses and considerable proportions of these have been implemented.

#### **Industrial Towns:**

Many of the industrial centres are not "towns" in the normal sense of the term. Nonetheless, using other criteria discussed above they may qualify as towns. Considering the stage of their development, the towns can be grouped into three groups: those at mature stage of development and include centres in Riyadh, Jeddah and Dammam; those at adolescence stage are centres in Al-Hassa, Al-Qassim and Makkah, while the centres in Madinah, Asir, Al-Jouf, Arar, Hail and Jizan might be at the take-off stage (Figure 9).

As shown in Table 15, there is inadequate data concerning the working or living population in these industrial centres, hence only planned industrial and housing areas are used. The size of the industrial areas varies from Makkah's total planned area of 758,000 square meters to Jeddah's planned area of 16.2 million square meters. Not all the developments are proposed in the same location. Jeddah, Riyadh and Dammam have industrial areas in two separate locations.

In terms of self-containment and land use diversity, there is no town that is really a fully independent entity. The second phases of Jeddah, Dammam and Riyadh might be considered as *satellite industrial towns* because they incorporate housing as part of their plans and are at considerable distance from the main city. The other centre might be called new *town-in-town* indicating a relatively higher dependence of the centre on the rest of the city for goods and services they consume. The dominant land use is light manufacturing and support services; while there may be on-site informal residential facilities for the workers in many of them, only Jeddah, Dammam, and Riyadh have purposely planned housing for industry workers. None of them has a municipality of its own, but they may have officials of the Ministry of Industry and Electricity to manage them and to provide limited civic facilities. The range of products of these towns are largely import-substitution type, ranging from petro-chemical down stream industrial products, metal and metal products, food stuffs, textiles and ready-made clothing, wood products; paper, printing and publication; to pottery, China ware, glass and building materials.

#### **Industrial Districts:**

These industrial production centres are less formal than the other two types



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described above, and in terms of size they are much smaller. Their population is usually less than 25,000, a large number of whom do not directly participate in industrial production and in terms of area they may be not more than four thousand square meters. Their exact boundaries may not be very clear but it is expected that industrial production activities form the dominant part of daily life of the district.

In the conduct of their production and consumption functions, the districts are assumed to depend on, and heavily interact with, the rest of the municipal areas. Their land use may be diverse but the greater percentage of the area is devoted to light manufacturing and service functions.

## **Instruments Of Urban Economic Development And Spatial Integration**

The spatial development of the Kingdom has been promoted by means of a number of instruments which have been used to coordinate and integrate the various levels of industrial activities. These include appropriately designed development guidance agencies that use police powers to control urban developments and also use the various types of incentives to guide industrial developments to the right place and at the right time. The second mechanism is a set of incentives that are designed to influence the decisions of investors, be they multi-national companies or local firms, which act as propulsive firms in the growth-poles. The third mechanism is the private sector investment incentives which are essentially formulated by the various Chambers of Commerce and Industry.

Although some of these institutional mechanisms might have been mentioned earlier in this paper, they will be discussed here again with the purpose of stressing the role they play in the integration of the industrial centres and hence in the structuring of the system of settlements in the Kingdom.

### **Development Agencies**

a) **Cities:** The two main agencies which are responsible for the development of the Industrial Cities for Jubail and Yanbu and their integration into the national spatial structure are the Royal Commission for Jubail and Yanbu (RCJY) and SABIC. The RCJY is the municipal authority that is responsible for the development of physical infrastructure in these two cities. SABIC, on the other hand, is responsible for the development of primary industrial production facilities in these two cities.

It may be pertinent at this stage to further explain the role of SABIC as the dominant propulsive firm in the industrial, technological and spatial development of the Kingdom and the Gulf region. To achieve its main planned goal of diversifying the sources of national revenue by producing value added goods based on hydrocarbon and heavy minerals, SABIC initiated a series of heavy industries as well as multi-faceted downstream programmes. To illustrate the achievements of this agency it may be pointed out that in 1990 alone, its plants produced 13.1 million metric tons of various petrochemical and metal products, which included 7.1 million metric tons of chemicals, 2.2 million metric tons of plastics and half a million tons of gas. Its total sale during 1990 was 10.5 million metric tons while 3.1 million metric tons was used as feed stock to produce other goods (SAMA 1991:111). However, in the process of achieving resource diversification it has great influence on the spatial integration of the Kingdom and the Gulf region as well as the promotion of activities in selected regions.

In addition to producing industrial goods and services, SABIC has succeeded in the transfer of the state-of-art technology to the Kingdom from a wide variety of sources. It has in this process helped in the training of Saudi citizens to operate and manage advanced industrial complexes.

Partnership with multi-national companies was a key strategy in SABIC's development efforts. This arrangement has helped to build the primary industrial facilities as well as offered the additional means to market and distribute Saudi products worldwide. The choice of partners was based on the expected benefits from the partnership, for example their proven experience in the petrochemical industry, their proven ability to show profits, their access to global markets, their advanced technology and their willingness to train Saudi staff at their operations around the world (SABIC, 1988). The partnerships have led to stronger linkages not only with local sectors but also with the world market.

SABIC is also instrumental in the socio-economic and spatial integration of the Gulf States. To this end, it has promoted some primary industries such as cement, aluminum and a marketing company and has sold some of its shares to the citizens of the Gulf States.

Both the RCJY and SABIC have developed a mechanism for coordination and cooperation to achieve the national industrial space integration objective in the primary industrial production sector. Even at this level they interact and coordinate decisions and actions with many agencies like Petromin and SAMAREC<sup>[1]</sup> as well as other agencies operating at the secondary level. All these decisions and actions have profound spatial development implications.



## *Industrial Centres*

**b) Towns:** The physical development of industrial townships is mainly the responsibility of the Deputy Ministry of Industrial Affairs in the Ministry of Industry and Electricity and most of the financial support for the development of industries at this level comes from the Saudi Industrial Development Fund (SIDF).

The office of the Deputy Ministry is responsible for providing conducive environment for industrial development through a range of incentives to potential investors. It is also responsible for creating a balanced industrial development by helping the lagging regions. Beside the Ministry of Industry and Electricity, there are other agencies such as the Ministry of Municipal and Rural Affairs and various municipalities that provide the land for the industrial town and link infrastructure development in the industrial townships with rest of the municipal areas. The other relevant infrastructure agencies include the Ministry of Post, Telephone and Telegraph (P.T.T.), the Water and Sewage Corporations and the Ministry of Transport.

The SIDF is to the industrial townships, what SABIC is to the industrial cities. The SIDF was set up in 1974 with an initial capital of Saudi Riyals 500 million (US \$ 134 million) to support and develop the national industrial sector in the Kingdom. It has since then played a significant role in expanding the base of local manufacturers by offering easy term, medium range loans along with consulting services required in the administrative, technical, marketing and financial spheres. Its cumulative loans dispersed up to the end of the fiscal year 1990 reached about Saudi Riyals 13 billion, of which 14.5 percent went to chemical industries, 14.9 percent to cement industries, 10.4 percent to metal products and 7.6 percent to foodstuff industries. These four industrial groups, out of about 24 groups, have accounted for 47.4 percent of total loans disbursements by the fund (SAMA, 1991).

It is important to stress that the key to success at this level not only depends on what happens at the Ministry of Industry and Electricity, but also on the degree of coordination between the Ministry and the other agencies that have mutually reinforcing functions. Proper coordination between and among these agencies becomes crucial when we consider that the Ministry has overall industrial policy formulation and implementation functions, but the actual industrial investment decisions are made by SIDF and the members of the Chambers of Commerce and Industry. The function of industrial promotion through research, design and monitoring is left to such agencies like Saudi Consulting House, Saudi Standard Organization and others.

**c) Districts:** At this level the promotion of industrial development is essentially the responsibility of the various municipalities and the commercial registration is provided by the Ministry of Commerce. Thus the municipal authorities provide



all the necessary infrastructure services while the Ministry of Commerce supervises their performance. The financial support is often provided by the Saudi Credit Bank and these are usually small factories and workshops which produce goods and services for local consumption.

### **Industrial Development Instruments**

In order to effectively implement its overall industrial development policy, the Saudi Government has developed specific policy instruments. These instruments are based on the premise that the main vehicle for industrialization in the Kingdom is private enterprise. They also assume that public sector participation in the industrial process is to provide the proper investment environment for private sector (Ministry of Planning, 1990). Thus the role the government assigns to itself is to provide such incentives that will encourage private Saudi and foreign participation in the industrialization process. There are, however, areas where the government has to intervene directly to establish certain industries that are either central to national interest or the amount of investments required are too large for private venture capital mobilization.

The type of instruments designed to implement the industrial development policy can be classified into two main groups, namely; direct and indirect. Both types, however, play major roles in the functional integration and specialization of technology space. The following discussion focuses on these instruments and their implications at the three levels of industrial centres.

#### **Direct Policy Instruments:**

This type of instrument generally refers to the direct government participation in the industrial development process through direct investment participation and the provision of physical infrastructure. As noted earlier, such intervention is limited to those areas where private investors do not venture, because of the large amount of capital requirements, or they are unwilling to participate because of the high risk involved. Examples of such interventions are in the capital intensive strategic heavy industries namely oil, natural gas and minerals.

#### **Indirect Policy Instruments:**

These are mainly incentives granted by the government to the private manufacturing firms and they include subsidies, various types of tax exemptions, loans, protection and other forms of incentives in kind. All these are designed to increase the viability of private sector industrial investments.

## **Industrial Centres**

**a) Subsidies:** There are two types of subsidies: in cash and in kind. Cash subsidies are those related to land and utilities. Industrial land is, as would be expected, generally very expensive if bought in the open market, but sites in the government-built industrial towns and cities are available at minimum annual rent. Utilities such as water, telephone, electricity and gas are also heavily subsidized. Subsidized services include research, consulting and training, which are provided by public institutions to the private sector either free or at nominal cost.

**b) Taxes:** The number of tax exemptions currently granted to investors include exemption of custom duty and company tax. There is custom duty virtually on all goods imported for industrial use, however, the incentives include customs exemptions on imported machinery, spare parts, and raw materials. In 1986, for example the value of custom exemptions amounted to SR 4,984 million, of which about 58% was for the machinery and spare parts and the remaining was on raw materials. Regional distribution of the total custom exemption indicates that Eastern Province had the largest share with 36%, followed by the Western Province with 35% (Ministry of Industry and Electricity, 1986).

Purely Saudi establishments are expected to pay *Zakat* (charity tax) at 2.5% only, but foreign owned companies are taxed between 25% and 45% of their profit. Joint ventures with a minimum of 25% Saudi equity capital participation are granted profit tax holidays for the first ten years of their commercial operation.

**c) Financial Assistance:** Loan of up to 50 % of the total project cost is usually granted to the private investors by the SIDF and Saudi Credit Bank, for a term of five to ten years without interest, but charges an administrative fee of 2.5%. The Public Investment Fund, on the other hand, was established for the purpose of meeting the credit requirements of public corporations such as Petromin and SABIC.

**d) Protection for local industries:** There are two types of protections, first is the preferential treatment by government of local products whereby domestic firms receive a preference of up to 10% on government contracts over foreigners. The other is, when convinced that local producers in their infancy are facing "unfair" competition from imports, the government may grant tariff protection by imposing duties on imported products.

Licensing is another form of protection and is obligatory for new and joint venture industries. Government licensing assures protection and assistance and also implies compliance with valid regulations.

e) **Other Forms of Encouragement:** These are in the form of guidelines issued through Royal Decrees and Council of Ministers Decisions. A few examples of these are: Royal Decree M 14, (1977) which relates to Government purchases and it directs that Saudi products are to be preferred over similar foreign goods as long as they serve the purpose for which they are needed even if their quality is lower than that of foreign products. Another example is the Resolution of the Council of Ministers No. 1977 (1976) which states that:

"Technical departments in ministries and public organizations as well as consultants working for the governments are hereby obligated to give priority to the products of Saudi industry in their specifications as long as the Saudi products are satisfactory."

There is another Resolution which prohibits contractors working for the government from importing goods similar to those manufactured locally.

### **Chambers Of Commerce And Industry**

The government has recognized the need to attract both foreign and local private sector contributions to promote development. The role of the Chambers of Commerce and Industry has been crucial in mobilizing the private sector investments. The organizations have provided a link between the business community and the government. They are also key actors in the diffusion of development from the industrial centres to the peripheries. Their roles are many fold: they acquaint their members on the many incentives, provide investment guidance to their members, assist in forming joint-venture with foreign firms and also advise the government on how best to provide an enduring investment climate.

Some efforts are being made by the government to create an economic environment which is conducive to an expansion in the private sector investment. Some of these include the introduction of an effective capital market, development of data bank on the industrial environment and the privatization of some public sector companies. In all these, the leading role the Chambers of Commerce and Industry (CCI) can play should be recognized. The CCI can use these innovations to strengthen and expand the existing companies. They can also assist in the transformations of some of the companies by opening up new areas of activities such as developing non-oil exports, developing high technology production capabilities and manpower development through research and training.

The CCI plays a significant role in the development of industrial centres. As will be shown later, they however seemed to have placed greater emphasis on the



## *Industrial Centres*

commercial than on the manufacturing aspects of economic activities. Their contribution to the economic and spatial development in the Kingdom can greatly be enhanced by taking a long term view of national development perspectives and strike a balance between the different investment areas.

### **Effectiveness Of Industrial Centers Strategy**

The effectiveness of the use of industrial centres as an instrument of urban and regional economic development can be assessed by their effects on 1) regional concentration, 2) metropolitan de-concentration, 3) regional specialization, and 4) technological innovation and integration of technological space.

#### **Regional Concentration**

The central thesis of this paper is that the concept of 'industrial centre' is a very useful planning instrument that can be used to structure and restructure urban and regional development. In the case of Saudi Arabia it can be interpreted as a strategy of regional concentration and metropolitan de-concentration.

It has already been argued that the industrial development of the Kingdom is highly concentrated in the most urbanized central East-West axis linking the two port cities of Jeddah in the West and Dammam in the East, with Riyadh as its central node (Rahman and Al-Muraikhi, 1986). As shown in Figure 1, added to these poles are the two purposely built industrial cities of Jubail and Yanbu. The locations of the industrial centres have reinforced and strengthened this regional concentration of people and economic activities along the central East-West axis.

The three *emirates* falling within the axis have attracted higher proportion of licensed factories and employments than the combined share their total population would normally warrant. As shown in Table 16, the combined share of national licensed factories and employment in them was 83.2% and 86.7% respectively in 1986.

The Table also indicates another trend which further illustrates greater concentration of development activities along the central East-West axis. The column showing the distribution of capital invested in licensed industries in 1986 indicates that the three *emirates* share 70%. It is noteworthy that the *emirates* in which Jubail and Yanbu are located--Eastern Province and Madinah-- had 68% share of the total capital invested in licensed industries. The figure could have been much greater had the investment by SABIC, ARAMCO and other firms in Jubail and



Table 16  
*Percentage Distribution of Licensed Industrial Establishments,  
 Employment and Invested Capital by Emirates, 1986.*

Region	No. of Licensed Establishments %	No. of Employment %	Invested Capital %
Riyadh	33.2	30.8	13.4
Eastern Region	23.1	27.5	44.0
Makkah	27.2	28.4	12.5
Madinah	4.2	5.5	24.1
Al-Qassim	4.5	3.4	2.0
Asir	2.8	1.7	0.6
Al-Baha	0.8	0.3	0.1
Jizan	1.2	1.2	2.8
Najran	0.5	0.2	0.1
Hail	1.0	0.4	0.1
Tabuk	1.0	0.4	0.2
Northern Border	0.2	0.1	N
Al-Jouf	0.3	0.1	0.1
Qurayyat	N	N	N
Total	100.0	100.0	100.0

Note: N = Negligible amount

Source: List of productive licensed industries,  
 Ministry of Industry and Electricity,  
 Kingdom of Saudi Arabia, 1986.

Yanbu are included. The relative capital intensity of Jizan is explainable by the nature of the resource base of the area.

An examination of the details of the Table 16 data show that based on total work force in the various industrial sectors the central East-West axis has the highest concentration of key sectors. Building material was the largest sector in 1986 with 31% of the total employment in which the axis contained about 81%, of which Riyadh had 35%, Eastern Province 23.1% and Makkah had 23%. The second largest sector was metal industries in which the axis had 93% of the total, of which Eastern Province, Riyadh and Makkah *emirates* shares were 33%, 31% and 29% respectively. The third largest sector was chemical industries and the axis contained 85% of which Eastern Province had the largest share, 38%, followed by

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Makkah and Riyadh *emirates* with 25% and 22% of the sector's employment. Likewise the fourth largest sector, food processing, shows heavy concentration within the axis which had 86% of which Makkah had 39%, Riyadh with 26% and Eastern Province 21% (Ministry of Industry and Electricity, 1986).

In all these provinces the roles played by the industrial towns in Dammam, Al-Hassa, Riyadh, Jeddah and Makkah are clearly significant. The private sector had responded well to the many incentives provided by centres as well as by Saudi Industrial Development Fund and similar agencies.

As pointed out by Rahman and Al-Muraikhi (1986), in the areas to the North and South of the East-West-Central axis, the licensed factories had shown little dispersal. The five *emirates* to the North of the axis have a combined share of 50% in food processing, about 1% in chemical industries, about 7% in building materials and about 4% in the metal industries. The *emirates* of Qurayyat and Arar could only attract few industries. The situation in *emirates* to the South of the axis was not any better. They hence have a combined share of 7% in building material industries, and only 2% in metal industries.

It should be pointed out that outside the Central Axis, only in Al-Qassim has a fully functioning industrial town. The Madinah industrial town is under construction but all the others are either at the design stage or at site acquisition stage. When those townships start functioning, they will certainly help change the industrial landscape of the Kingdom. They will most certainly attract industries that will serve local markets and possibly national and international markets. Their impacts on the regional and the national spatial structure will be significant.

So far we have examined the relationship between the development of industrial centres and urban and regional development as measured by employment. Another useful indicator is wage. As shown in Table 18 there is a close relationship between the average monthly wage earning with the degree of complexity of the industrial centres. The average monthly wage in Jubail, Yanbu, Dammam, Jeddah, and Riyadh range between SR 2,743 and SR 3,976, while in all other areas the average was below SR 2,500 in 1991. Thus the areas in which the industrial cities and the mature Industrial Centers are located have a higher average monthly wage.

The strategy of regional concentration is achieved by active or passive approach. Active approach is that which involves the rejection of the existing settlements structure so as to create new centres of development based on new ideas and new functions. Passive approach, on the other hand, accepts the rationality of

the existing settlement structure and seeks to promote development at some of these centres. By concentrating development in the central East-West axis, it appears that the government of Saudi Arabia has selected the passive approach. The emphasis on development in the central East-West axis is reinforcing the old pattern of urban structure, which consisted of the merchant towns along the Red Sea coast; the oases settlements of Al-Hassa, Qatif and Al-Qassim together with the weekly market towns straddled in between; and then the holy places of Makkah and Madinah with Jeddah forming the gateway to both of them (Sogreath and Osailan, 1984).

The concentration of industrial development in the central East-West axis seemed to have influenced the concentration of other sectors in that region. Particularly development in physical infrastructure, social facilities, in addition to employment opportunities had greatly attracted local, national and international migrant workers to the urban centres of this region. Out of the total Saudi Riyals 80 billion allocated for the provision of municipal services in the main urban centres of the Kingdom between 1975 and 1988, about 75% went to the municipalities in the East-West axis (Al-Ankary and El-Bushra, 1989). Also, most of the higher educational and research institutions are located in the axis; for example, all but one of the Kingdom's seven universities are located in the region (Riyadh has two, and Dhahran, Hufuf, Jeddah, Makkah one each), and it has three university branches (in Dammam, Hufuf and Taif).

### **Metropolitan De-concentration**

In the Western industrialized countries, the de-concentration of the metropolitan areas had occurred as a result of the decline and decay of the core areas of their cities where most of the industries were concentrated. There was, therefore, the need to disperse development to the suburbs. The situation in the Kingdom is different. Three trends emerge; the first is the attempt by the municipalities to identify serviced sites where small light manufacturing and service workshops could relocate from their dispersed locations within the cities. Taking Dammam as an example, Figure 10 and Table 17 show the existing and planned industrial districts in Dammam metropolitan area and it is observed that all these units are located at the fringes of the metropolitan area.

The second trend is leapfrogging type of development, where industrial estates, initially located at the fringe of the metropolitan areas, soon became part of the fully developed urban fabric and, therefore, new estates have to be planned some distance away from the developed areas. In Dammam the development of industrial estates followed this pattern.



## Industrial Centres

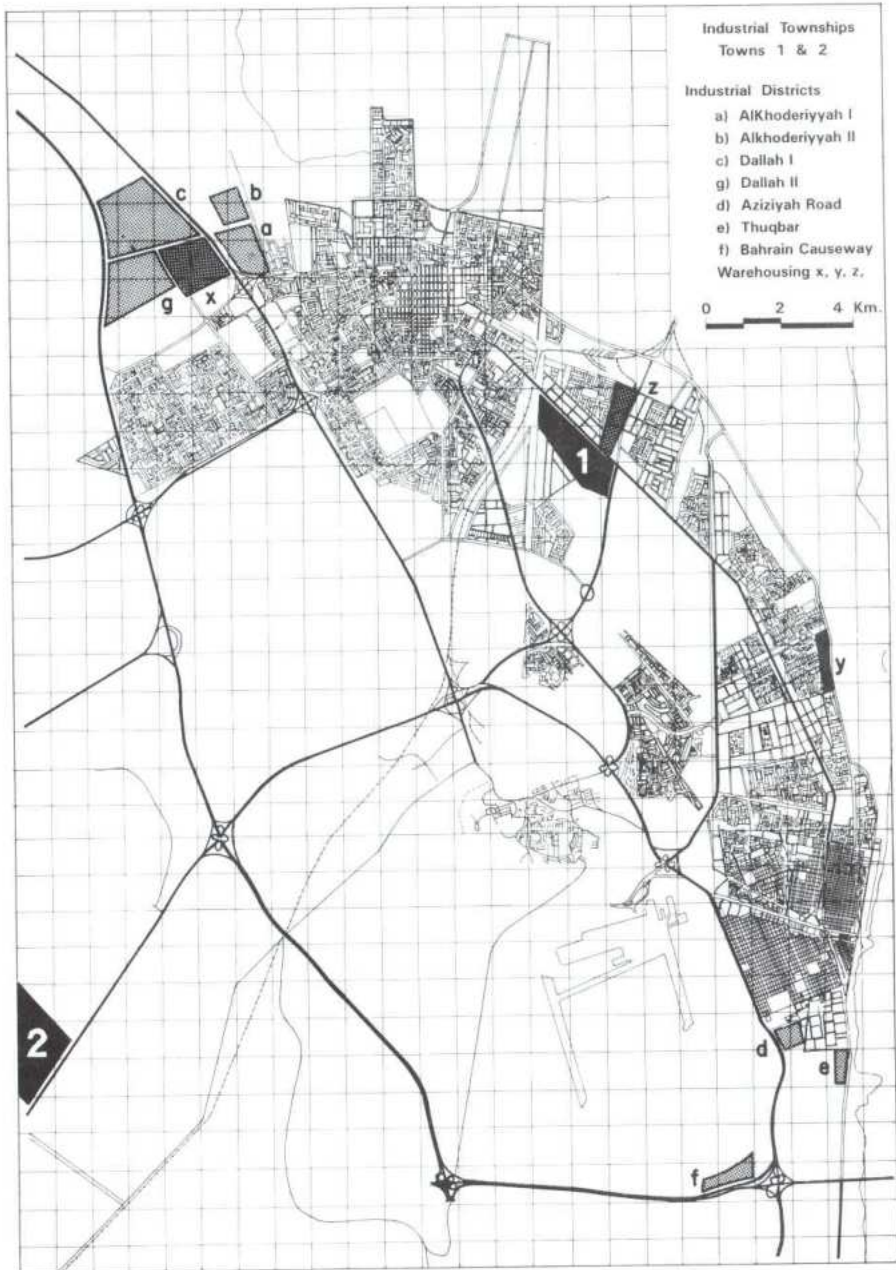


Figure 10: Dammam Metropolitan Area Industrial Towns and Districts



Table 17  
 Dammam Metropolitan Area: Characteristics  
 of Industrial Towns and Districts, 1992.

Industrial Centers	Total Area (Ha)	No. of Factory	Landuses	No. of Jobs
Townships:				
Township 1	250	120	138 Ha Factories 112 Ha Openspace & Support facilities	12.954
Township 2	2400	95	151 Ha Factories 188 Support Facilities. 147 Ha Open Spaces 408 Ha Residential 1206 Ha Future Expansion	6.000
Districts:				
a) Alkhode-riyah I	225	944 lots	Factories & Workshop	7,552
b) Alkhode-riyah II	20	205 lots	Planned Fac. & W'shops	NA
c) Dallah I	325	16655 lots	Factories & W'shops	7,944
d) Dallah II	200	1098 lots	Factories, wks, faci.	3,952
e) Aziziyah Rd.	30	208 lots	" " "	
f) Thuqbar	NA	NA	Private workshops	
f) Bahrain Causeway	107	157 lots		
Warehousing x.y.z				

Source: Fieldwork by the author, 1992

Note: NA = Data Not Available

## ***Industrial Centres***

The third trend is the location of an industrial town to serve two urban areas and their surrounding regions. For example, the Al-Hassa industrial town serves Hufuf, Mubarraz and Oyun Al-Jiwa; the Al-Qassim industrial town serves Buraidah and Unayzah; while Asir industrial town serves Abha and Khamis Mushayt. This concept of region-based industrial town, is extended to the national level through Jubail and Yanbu and these centres are not only aimed to open up lagging regions but also to reduce the pressures on Dammam, and Madinah and Jeddah metropolitan areas.

The metropolitan de-concentration strategy is used in many countries to counter the problem of exaggerated growth of their major metropolitan centres while large part of the country lag behind in national development efforts. To solve this problem, these countries have formulated spatial development policies which seek to combine the objectives of reducing an "exaggerated growth" of the national metropolitan region with stimulating development in lagging regions. Examples of this strategy are the French policy of promoting equilibrium metropolises and the British New Towns policy seeking to de-concentrate London. The National Spatial Strategy prepared by the MOMRA intends to combine the economic efficiency and spatial balance criteria. It is possible that in future the rapid development of Riyadh, Jeddah and Dammam can be countered using this type of metropolitan de-concentration strategy. It is, however, necessary to formulate a "desirable urban development strategy" for Saudi cities to sustain the growth and prosperity enjoyed during the last 2 decades.

The issue of regional imbalance in the Kingdom is increasingly receiving attention (Ministry of Planning, 1990:369). The concentration of investments in municipal services in the central East-West axis aggravates this problem. The establishment of industrial centres in strategic locations outside the axis is an attempt to address the problem but such measures need to be accompanied by the provision of appropriate level of municipal services.

### **Regional Specialization**

The concept "Industrial Center" is very important as an instrument of functional integration of economic space and specialization of technology space. In this context the Kingdom is thought of as a hierarchically organized network of industrial centres with the industrial districts functionally linked to industrial towns, and the industrial towns related to industrial cities. Each scale and type of economic activity has its optimum location in the settlement hierarchy based upon national efficiency considerations. It is further assumed that the industrial centres and their respective regions specialize in activities, successfully exploit their comparative

advantages in a way that will maximize overall national prosperity.

Since population and economic activity are distributed in space, national planning efforts have been directed towards strengthening the spatial system for the benefit of the national prosperity. It is assumed that the efforts of the various agencies of government in the process of functional integration of industrial centres with their immediate regions would ensure balanced and sustained growth.

To examine the pattern of economic specialization in the main urban centres of the Kingdom, the latest regional industrial employment figures from the General Organization of Social Insurance (GOSI) are used. The GOSI employment data seems most reliable because of the high degree of accuracy demanded of them.

Table 18 shows the industrial employment distribution in the GOSI regions in which the industrial centres are located. It can be seen that centres with highest number of sectoral specialization are located in the central East-West axis, namely Riyadh, Jeddah, and Dammam. Also both Al-Qassim and Tabuk show a remarkable degree of specialization in at least 5 sectors, while the industrial cities of Jubail and Yanbu specialize in 3 and 4 sectors respectively.

These two industrial cities and some of the 'mature' industrial towns show considerable specialization in manufacturing. In the other sectors it is observed that Al-Qassim and Hail are highly specialized in agriculture, while Dammam is specialized in 3 Mining and Petroleum sectors.

Specialization is achieved largely by means of leading industries (petrochemical in Jubail, dates processing in Al-Hassa) or a cluster of industries (paper, printing and furniture in Riyadh) which induce the polarization of other economic units into these centres. This economic specialization and polarization inevitably results in geographic polarization. The dynamic propulsive activities of these centres spread outward, through spread effects, into the region and eventually to the less developed regions.

### **Technological Innovation And Integration Of Technological Space**

The industrial centres are also the centres of technology in the Kingdom. As technology centres, their classification follows the same pattern of cities, towns, and districts. Table 19 shows the main characteristics of technology in the industrial centres. It suggests that there are essential differences in the type of technologies operating in the three types of centres. The differences are in their potentials for diffusion, the degree of innovation, the complexity of machinery used, level of

Table 18  
Sectoral Location Quotients of Employment for GOSI Field Areas 1991

Areas	Average Monthly Wage (SR)	Workers	Agr./Fl.	Mining/ Petrol.	Manuf.	Water/ Elec.	Const.	Trade/ Hotel	Commun.	Finance & Re.	Social Serv.
Jubail	3368	31734	0.062	0.662	2.631	1.112	0.521	1.425	0.327	0.788	0.625
Yanbu	3499	16709	0.413	1.856	1.728	2.793	0.581	0.646	1.005	0.65	0.974
Riyadh	2743	238533	1.418	0.071	0.98	0.965	1.041	1.078	0.961	1.415	1.072
Jeddah	3023	173085	0.694	0.617	1.327	0.765	0.72	1.222	1.592	1.332	0.953
Dammam	3976	243619	0.273	3.337	0.89	0.918	0.367	0.709	1.19	0.706	0.41
Al-Hessa	1479	26028	0.495	0.017	1.006	0.071	0.959	1.097	0.355	0.512	1.827
Al-Qassim	1837	26243	5.959	0.03	0.719	1.712	1.05	1.028	0.322	0.853	1.222
Hakkah	1689	46378	1.712	-	0.5	1.087	1.401	0.634	0.396	0.553	1.752
Madinah	1905	34114	0.559	0.017	0.388	1.057	1.85	0.553	0.152	0.627	1.382
Abha	2498	33897	1.107	0.003	0.356	2.48	0.52	1.608	0.251	0.552	1.722
Tabuk	2182	18245	1.186	0.017	0.309	1.119	1.038	0.787	1.458	0.917	1.837
Al-Jouf	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arar	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hail	1927	6559	4.495	0.023	0.639	0.018	1.032	0.731	1.243	0.905	1.834
Jizan	1730	11802	1.537	0.042	0.879	0.006	0.433	1.518	0.152	0.526	2.164

Source: General Organization for Social Insurance, 1992.

Notes: The location quotient for an industrial sector in a given GOSI field office.

Locational Quotient (L.Q.) is defined as:  $L.Q. = (E_i/E) / (N_i/N)$

Where:  $E_i$  = employment in the  $i$ th sector in a given GOSI field area.

$E$  = total employment in the same field area.

$N_i$  = employment in same  $i$ th sector at the national level.

$N$  = total employment at the national level.



Table 19  
*Characteristic of Technology in the Industrial Centres*

Characteristics of Technology	Location of Technologies		
	Cities	Towns	District
Spatial Diffusion Potentials	National	Regional	Local
Machinery			
*complexity	Very high	High	Simple
*capital intensive	High	Moderate	Labor in- tensive
Type of Workers			
*Level of education	High	Moderate	Low
*Training frequency	High fre- quency	Frequent	Hardly -needed
Ownership	Joint venture	Saudi	Saudi

Source: Generated by the authors.

labour skill required, and ownership of the technology.

It is very important for us to appreciate the needs of the new industrial structure and its implications as well as its potentialities. These include the particular requirements for the manufacturing type of technology. These requirements are the physical quality of industrial sites which include fairly flat well drained and firm land. Then there is the need for interaction and exchange with other industrial and commercial establishments which should be close enough to ensure the agglomeration economies. Accessibility to places of markets, raw materials and labor supply are another important factors. Compatibility with the social environment is a crucial factor because that could determine the social acceptability of the technology and it is necessary to avoid any unintended side-effects on environment and social structures.

It is also very important to note that to be of enduring benefit to the Kingdom, the selection and use of technology should not conflict with Islamic values. Based

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on this criterion, factories producing socially harmful or religiously unacceptable products such as breweries, cigarette factories and pork processing plants are not permitted in the Kingdom.

Heavy industry technology has great potential in the production of material goods and services. It has its limits, however. While it provides an increase in employment, income and higher standard of living, its careless use can aggravate unemployment problems and increase toxic and non-toxic waste. Moreover, the managerial skills to maintain these industries call for imported manpower, the recruitment of which needs to be carefully planned.

The social and environmental problems resulting from rapid industrialization are not insurmountable. These problems can be avoided or their effects reduced to acceptable levels with careful planning and the right choice of technology. It is encouraging to note the experience of Jubail and Yanbu which show how, by means of environmental protection and enhancement, the livability of these industrial cities can be promoted. Through careful planning and design, the residents of Jubail and Yanbu are offered well-designed communities that offer a high standard of living. The use of environment control instruments has greatly improved and maintained the quality of natural air and water sources. In addition, regular clean-ups and landscaping with native plants have helped to preserve large tracks of desert.

## **Conclusions**

This paper has argued that industrial centres have been used in the Kingdom of Saudi Arabia as instruments to strengthen the urban economic base and spatial structure, increase industrial employment, de-concentrate the urban centres, encourage regional integration and specialization, and to develop the technological space of the Kingdom.

It is advisable to replicate the use of industrial centres as instrument to reduce development imbalance between and within regions. For example, settlements with high growth potentials and propensity in the north and south of the central East-West axis can be selected and treated as growth poles. Within the central axis, the intra-regional imbalance can be addressed by developing new growth centres in the axis. Thus the growth pole strategy can be used for dealing with inter-regional issues while growth centre policy can be used to solve intra-regional development problems.

It could be concluded that the strategy of industrial centres as a planning instrument is a replicable model. In addition to the industrial technology currently in use, new and more innovative high technology could be used as instruments of growth. Thus as high-technology centres, they could assist not only to produce higher value-added goods, but also to strengthen, and where necessary, to re-structure the national urban spatial systems in the Kingdom.

### **Note**

- [1] SAMAREC has been abolished and all its activities and assets are transferred to ARAMCO in mid-1993.





# 6 Urban Land Development Process

Walead A Abdulaal

Cities and towns in the Kingdom have undergone dramatic changes over the past three decades. Land subdivision is the main process by which raw land is converted into urban land, and enters into the land market. Therefore, land subdivision becomes one of the early stages of the land development process. However, research on the land development process in the Kingdom is very limited, therefore literature of land development in other countries is used for seeking a framework to base the discussion of land development in the Kingdom. In fact there are a number of ways to study the land development and this is summarized by Healey, (1991) as follows:

- i) Equilibrium models based on the economic signals about effective demand as reflected on rents and yields (Cheshire and Sheppard, 1989).
- ii) Event-sequence models; which focus on the stages of the process as derived from property managers (Cadman and Austin-Grow, 1978).
- iii) Agency models, which focus on the role of the actors involved on the process, in order to describe the process through a behavioral point of view (Goodchild and Munton, 1985),
- iv) Structure models, which are based upon political economy and the forces which influence structural relationships in the development process (Harvey, 1982, 1985).
- v) In addition is the institutional models suggested by Healey, (1992).

In fact, each model has its merits and a distinct way in presenting the land development process. This paper is based on the behavioral approach, which appears the most suitable method to describe the land development process in the Kingdom. Before discussing this subject, it is important to summarize what is already known about the land development process in the Kingdom and the role of the principal actors in the process are discussed next to provide a basis to build a descriptive model on the land development process.

## Stages In the Land Development Process

The land development process begins when a site is considered suitable for

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subdivision, and is completed when the necessary changes have been taken place (land is serviced and developed) and the land is occupied. SCET (1980) has provided a description of the land development process in the Kingdom and summarized the stages as follows:

1. The provision of land: the process by which undeveloped land is brought into the land market.
2. Improvement of land: how land is subdivided and basic infrastructure is established.
3. Actual building construction.

Although explaining the land development process solely by the description of the stages in the process is criticized in the literature (Healey, 1991), we start by citing these stages, as they form the only available description of the land development process in the Kingdom.

### **The Provision Of Land**

In the first stage, SCET (1980) considered land donations, either by the direct or indirect process, as the main process by which land gets into the market. The direct process implies the ultimate distribution of plots to those whose applications for land grants have been accepted. The indirect process is where an individual receives a Royal grant for a piece of land which is sent to the concerned local municipality for application.

This description of the provision of land is over simplified and narrow, because SCET's description of this stage is based on the assumption that all land which comes onto market are granted land and thus they bypass the market. In practice, however, land may be acquired in different ways:

1. Inheritance: Land under private ownership may pass to the successors after the landowner's death.
2. *Ihya*: Dead land may be revived by individual or groups and may be acquired by the provision of *Ihya*.
3. Donations: As described by SCET.
4. Purchased: Any land under private ownership can be acquired if agreement between the buyers and sellers is reached.

Further, land that gets into the market may be either under agricultural use and or could be vacant or undeveloped land. However, as a prerequisite to get the subdivision sanction from municipalities, agricultural land has to be dried and green plantation must not be a feature of the site. This process of preparing land can take several years, because desiccating agricultural land to make it shrivel up and become unproductive is a time consuming process. Due to this constraint subdivision of the land under agricultural use takes longer time than the subdivision on vacant land.

### **Improvement Of Land**

Commensurate with the description of SCET (1980), the land improvement process passes through two indispensable junctures, land subdivision and the construction of infrastructure, such as road, water, sewerage and electricity.

#### **i) Land Subdivision**

In practice, any land subdivision should have a permit from the concerned municipality and land subdivisions must correspond to Urban Growth Boundaries prepared under the directives of MOMRA.

#### **ii) Construction Of Public Utilities And Community Facilities**

Owners who subdivide their land and get a subdivision permit do not participate financially or physically in the construction of public utilities and community facilities. The Municipality is responsible for the provision of streets and municipal services, sewerage and water networks are administered by a separate department, the Directorate of Water and Sewerage which is under the control of the Ministry of Municipal and Rural Affairs. Theoretically, extension of services should start soon after subdivision, however, in practice the actual supply of services takes place after development has occurred, rather than in advance. Past experiences indicate that agencies concerned with land development process needs to strengthen their cooperation and must coordinate their activities well in advance for an efficient provision of services.

### **Construction Of Buildings**

After the subdivision and sale of plots, construction of houses is the final stage in the land development process. This assumes that all sold plots will be built, regardless of the owner's motives for acquisition and their financial ability to start development. Moreover, this stage of building construction usually does not form

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the final stage because services are in practice provided after buildings are constructed.

In spite of the simplification of the discussed land development process, the work of SCET provides the first insight into the land development in the Kingdom. Explaining the land development process by describing the above stages may not lead to a comprehensive conception of the process. Development of land cannot proceed unless agreements are reached between a variety of actors, and agreements may only be attained after considerable negotiations among the actors. In order to illustrate this process, the remainder of the chapter focuses on the principal actors involved in the land development process and then outlines aspects of the process in land development by examining the way land passes through the stages of development and by redefining the development process in terms of its key events (Goodchild and Munton, 1985).

### **The Actors In The Process**

In this section we aim to identify the principal actors in the land development process; their role in the process will be explained in the next section. Contributions to this task were made by SCET (1980), GACDAR (1980), Yemeni (1986) and Abdulaal (1987), all of whom identify the principal actors in the process of land development as:

1. Original landowners, who subdivide their land.
2. Real estate agents, who mediate between buyers and sellers.
3. Businessmen, who initiate large development operations and become active developers constructing apartments or office buildings (SCET, 1980).
4. The government.

Apparently, there are overlaps in this classification, as businessmen may act as large landowners as well as developers and may participate in initiating subdivision rather than solely participate in construction. Existing land policy provides a guide to classify the actors in the land development process. For example, the REDF's interest-free loans policy, which encourages home ownership for all Saudis by granting them loans to construct houses rather than buy finished houses, has to a considerable extent, shaped the way in which land development proceeds. Enabling people to erect their own houses has hindered the emergence of large developers who buy land, develop it and sell constructed houses. Rather, the REDF policy has encouraged individuals to buy their own plot of land and construct a house with the



help of contractors. Therefore, we may classify the actors in the land development process as follows:

1. Landowners: those who own tracts of land capable of subdivision;
2. Real estates agents: those who mediate between buyers and sellers;
3. Purchasers of the plots: those who buy subdivided land for speculation or development; and
4. The government as a supplier of land, controller of land development and a financier for development.

## **The Roles Of The Principal Actors**

### **Landowner**

A landowner is the holder of a tract of land being used in agriculture or kept vacant which can be subdivided. The role of the landowner in the land development process centres on his decision to dispose of his land and the way he goes about it; he may sell it as one estate or subdivide it according to subdivision regulations. His decision depends upon his motives of ownership and the investment strategy he adopts.

### **Motives Of Ownership**

It is not usually right to assume that all landowners attempt to maximize their profits from the land they hold, because some landowners involve in the development process without any premeditated or calculated choice of their own, for example owners by inheritance. Their actions are affected by their motives of ownership, and these need not be profit oriented. For example, in the case of *Waqf* land, the main motive for ownership is charity, and land under *Waqf* tenure may be sold for a wide variety of reasons, including the fact that the property is no longer suitable for its existing use. This may affect the time at which land is released and developed.

Some owners remain primarily concerned with the use value of land (benefits from the land), financial and non-financial. For example, for owners of agricultural land, the financial benefit from the land is the income derived from the sale of products. Non-financial benefits may be regarded as the social benefits the owner gets from his land, for example, the social status/obligations in occupying the land. Nevertheless, at some stage in the land development process, all owners will be made aware of the exchange value of their land, sometimes many times the original

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purchase price. Thus we may classify landowners as those who hold the land as an investment and those who hold the land for a variety of reasons other than investment.

Owners who hold their land as an investment may be of three types:

- i) owners who were granted the land;
- ii) owners who inherited the land; and
- iii) owners who purchased the land or acquired it through *Ihya*.

The latter may be seen as true investors because they spent some money to acquire the land, whereas the former two own the land without making any financial effort. The true investors can be classified into those who seek 'a nest egg' or some means of protecting their personal assets from the effects of inflation and those whose business is to make a living from the gains in capital value of the land in which they deal. The behaviour of the former two types, i.e., inheritors and grantees of land, is more variable than the true investors. In some cases their operations will be indiscernible from that of the profit-maximizing investor, in others it will be representative of some one whose ownership is accidental and such owners may take little managerial interest in the land.

Of the various types of the landowners identified in the previous section, only investors are important here, because they are the owners who adopt a strategy for their investment. Owners whose motives are charitable purposes, as in *Waqf* land, may not adopt investment strategies. The framework within which to examine the decisions of landowners depends upon the strategies which the landowner could adopt which include three sets of related decisions, i.e. sell, develop or keep the land (Goodchild and Munton, 1985).

A further motive for ownership may be called 'control' and it arises where the main reason for owning land is to restrict or influence its use for the benefit of other land held in the same ownership. An example of this sort of motive is when an owner holds adjacent land mainly to prevent its development or subdivision so as to safeguard the amenities enjoyed by his own property. (Goodchild and Munton, 1985).

### **The Landowners' Investment Strategy**

In this section we shall discuss the investment strategy of the landowners, by which they influence the land development process. The landowners' investment strategy include three sets of decisions:

- a. Financial decisions
- b. Operational decisions
- c. Management decisions

The financial decisions concern a landowners' decision to sell the land; particularly important is the timing of the sale. Prior to the sale of the land the landowner may adopt an operational strategy which involves a decision between subdividing the land by getting a subdivision permit or selling the land as one piece without subdivision. In addition, a management strategy is adopted during the acquisition period.

Any owner of a large tract of land enjoys three choices with regard to his investment strategy, which may involve any of the above three strategies. These choices are: first to withhold the land, and therefore a management strategy is adopted; second, to subdivide the land, which involves an operational strategy; and thirdly, to sell the land, either after subdivision or as one piece, depending upon his financial strategy.

#### **The Sale Of Land: Financial Decisions**

A wide range of reasons may affect a landowner's decision to sell his land. It is manifested in the literature that landowners opt to sell their land at a particular time, revealing a wide range of motives for holding land, other than its investment value and a wish to maximize profit. Personal factors often affect the timing of the sale, such factors may include family commitments or a need for cash to raise capital for business expansion or to meet other needs. In such circumstances, the landowner may not be in a good position to negotiate a selling price with the buyer because there are reasons which force him to sell at a certain time. These considerations may result in distress sale of properties. We may classify the reasons for selling land as follows:

1. Financial gain: here sale of land is determined by financial factors, i.e., profit making, because the price of land stands to benefit the vendor.
2. Need for cash: a sale for this reason is found when the landowner is forced to sell because of a pressing need for cash.
3. Personal factors to the landowner: a sale for this reason is a sale for non-pecuniary reasons which are personal to the landowner.
4. Improvement in surroundings: a sale because of changes in the neighbouring

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lands, eg., a neighbouring land subdivision.

However, it is important here to emphasize that just because a landowner aims to sell his land at the highest possible price does not necessarily make financial gain the primary reason for selling. The concern here has been with the underlying reason for sale and not the method of sale which is considered as part of the landowner's operational strategy.

### **The Sale Of Land: Operational Decisions**

Two things are important in the operational strategy of the landowner. The first is whether he sells the land with the benefit of subdivision permission; and second, the method of sale. This implies the decision of the landowner to sell the land by subdividing it or without subdivision.

The first choice, of selling the land without subdivision, may be quicker, because the landowner neither have to apply to the Municipality for a subdivision permit nor is he required to submit a subdivision plan. The landowner, however, will not get the best price for his site by this method because after getting the subdivision permit, the price of land will increase, (SCET, 1980).

The second choice of the landowner is to subdivide the land. Those who seek to maximize their profits will play an active part in the land development process and try to obtain planning consent by submitting their own subdivision plan to the Municipality. This method will take some time, depending on how quick the landowner is to meet the Municipality rules and regulations of subdivision.

Once the subdivision permit is granted the next step in the operational strategy is to offer the plots for sale by a method that permits competitive bidding so as to realize the highest possible price. There are several ways by which subdivided land can be sold:

1. Through a registered agent;
2. Through a casual estate agent;
3. By auction;
4. Advertising in the newspapers; and
5. Direct contact with buyers.

Estate agents may be called to sell the plots and receive commission on the deals they make. The more plots they sell and the higher the price of sale, the more commission they get from the deals. However, sale of plots through the estate



agents does not give potential purchasers the opportunity to hear other bids for the plot. In contrast, potential purchasers can hear other bids through auction sales. Usually landowners advertise auction details in the local newspaper or the estate agent act on their behalf in this respect. The landowner's choice of method depends upon his knowledge of the land market. The owner needs to display a perceptive awareness of the state of the land market in deciding how to market his plots.

### **The Landowner's Management Strategy To Sell Land**

The third aspect of the landowner's investment strategy deals with his land management strategy, i.e., what to do with the land while waiting for the appropriate moment to sell or subdivide. Most of the subdivided land in most cities and towns in the Kingdom was originally vacant and few were under agricultural use in cities like Madinah. Many landowners did not develop their sites because they were large and development of such sites require considerable capital. Few of the areas subdivided in recent times were in agricultural use for a long time and have changed to urban sites only within the course of the past two decades.

Prior to subdivision of any agricultural land, the landowner should leave his land idle to prove that his land is not in agricultural use in order to get the subdivision permit. The temporary loss of income during the time the land is left idle will be more than offset by the eventual receipt of a substantial capital gain.

Agricultural land may be left idle at the time that the landowners think that they can realize its development value, i.e., when its location improves. Location may improve for a variety of reasons, for example, the existence of a neighbouring housing development, the construction of a new road etc. Therefore, the landowner can be encouraged to change the use of his agricultural land. Another reason for the conversion of agricultural land is the death of an owner who was keen to retain the agricultural use, and when land passes to his heirs, their management strategy is to get rid of agriculture in order to subdivide the land.

The role of the landowner in the land development process varies considerably. When a landowner obtains a subdivision permit and subdivides his land to sell it, the landowner contributes to the supply of subdivided land. The contribution of the landowner to the land development process may be limited when he does not obtain a subdivision permit prior to the sale of his land. Therefore, the role of the landowner may vary from an active one that has an important influence on the location and time of subdivision there by influencing the growth boundaries of urban areas, to a passive role where he is manipulated by others to sell his land

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without subdivision. The manipulation is at its extreme when the landowner is required to sell his land through the compulsory acquisition policy of the government, because under these circumstances the landowner plays no part in the land development decisions.

### **Estate Agents**

There are two types of estate agents in Saudi Arabia. The first are estate agents registered with a branch of the Ministry of Commerce, and officially recognized as estate agents. The second type is the informal estate agents who are not registered, and who may have a second job.

The potential activities of an estate agent as defined by the Ministry of Commerce include the following:

- i) The estate agent may act as a link in land transactions. After being approached by a client, the estate agent may effect an interview with a third party for either the purchase or disposal of an interest in land.
- ii) Estate agents may also actuate the sale or purchase of an interest in land, after a seller and buyer have already met and come to a decision over such an interest in land.
- iii) Estate agents may arrange tenancy agreements on behalf of their clients.

However, the law does not force landowners or prospective buyers of land to make their transactions through an estate agent. The role of the estate agent in land development depends on the type of estate agent.

### **Registered Estate Agents**

Although the primary source of income for registered estate agents is the commission earned from the successful sale of interests in land, they can be doubly rewarded by becoming involved in the land development process themselves. Their activities may include the following:

- i) Finding a site for an investor who wishes to subdivide and sell the land.
- ii) Submitting a subdivision plan and obtaining a subdivision permit on behalf of the landowner.
- iii) Sale of the plots.

Therefore, the services estate agents give to the actors in the land development process range from being a sales agent to a representative of the landowner in all activities related to the land development. The services they offer include:

- i) To identify the ownership(s) on a site that an investor wished to buy.
- ii) To negotiate with the owners of the site any intended acquisitions.
- iii) To give detailed advice on the layout of the subdivision plan, as they are aware of the planning by-laws of the local municipality.
- iv) To discuss the subdivision plan with the municipality.
- v) Based on their knowledge of the land market they may give an assessment of the potential purchase price and selling price of the plots.

The nature of work demands estate agents to constantly travel within the city searching and valuing potential land. As a result, estate agents can readily identify the sites in a city that have potential for subdivision. Some sites may be spotted while the estate agent is involved in a selling or subdividing a neighbouring site or whilst in transit. If a site is spotted as having a potential for subdivision but is not for sale, then the agent might approach the relevant landowner to make him aware of the value of the land, or persuade him to sell or subdivide the land. However, if the site spotted ready for sale, the agent is rewarded with large commission resulting from the transactions.

A double reward for the estate agent arises when the agent introduces an investor to a site and the agent receives the right from the investor to act on his behalf in obtaining the subdivision permit, advertising in the newspaper and selling the subdivided plots.

### **Unregistered Estate Agents Or Freelance Estate Agents**

These agents are generally concerned with spotting sites that have subdivision potential and putting the vendor in contact with a purchaser. The freelance estate agents will receive a commission in the form of a percentage, usually 2.5%, of the sale price from the vendor or the buyer. However, freelance estate agents are not involved, as such, in the sale of the plots or in obtaining subdivision permits from the municipality, rather they specialize in locating sites and usually work over extensive areas in the city.

### **The Purchase Of Land**

The buyers of the plots are the last type of actors in the process. Their role in the land development process is contingent on the behaviour of the larger landown-



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ers who subdivide their land and offer it for sale. Plot buyers' influence on the development process centre around their motives for acquisition, and their decisions to develop, sell or withhold the plots they have purchased which will, in turn, depend upon the former.

Motives of ownership for buyers may range from occupation of the plot to investment. Owner occupations are encouraged by the availability of the Real Estate Development Fund's (REDF) interest-free loans to construct their own houses on plots that they own. Usually, all such buyers purchase with the motive of long-term ownership and they act positively by developing the land as soon as they get the finance from the REDF. Equally important to this category are those who apply for land grants with the motive of constructing their own houses. Nevertheless, grantees do not have a choice of plots as they are normally allocated plots according to the availability of public land. Most public land subdivisions are located at the urban fringe relatively far from the city.

The other type of landowners are those who buy the plots for investment and they could be of two types, the first are those who invest in the property development either to let or to sell. The other type are those whose objective is to gain from the capital value of the land in which they deal, through speculation. The investment strategy that the plot buyers adopt may have three aspects; financial, operational and management.

### **Financial Decisions To Purchase Land**

For those buyers who buy a plot with the objective of building and occupying the property, the financial considerations are not important because they have already decided to occupy the house. However, there might be a stage at which such owners may wish to sell because premises are getting old or expensive to maintain, or are no longer suitable for their present use due to technological changes or have become unsuitable because of a change in the neighbourhood characteristics. Owner-occupiers may also sell for personal reasons, such as a wish to retire or live in a different location or illness.

In contrast, investors whose main concern is financial gain may sell for different reasons, especially those who want to realize an increase in the capital value, although the immediate reason for sale might be a pressing need for cash. Therefore, we might classify the reasons for sale as follows:

1. Financial gain
2. Need for cash



3. Property obsolescence
4. Personal factors

### **Operational Decisions To Purchase Land**

For large landowners, the operational strategy centres around the decision to apply for a subdivision permit from the Municipality, which is usually granted provided that the applicant appreciates the planning by-laws which govern the approval of the subdivision permit. To a plot buyer, a building permit is important because in theory no construction is allowed unless a permit is granted. Obtaining a building permit on subdivided land is not problematic and is usually guaranteed by the municipality, provided that the design of the proposed development is acceptable. Therefore, the operational strategy of those who wish to build on their plots includes obtaining the building permit before commencing development and offering the land for sale. Obtaining a building permit is not important to speculators who want to realize an increase in capital value, as they do not intend to develop, and future owners are guaranteed a permit as long as the design proposal is accepted by the municipality.

### **Management Strategy To Purchase Land**

This is the third aspect of the plot owner's investment strategy and it involves what he does with the land while waiting for the appropriate moment to sell. Unlike the case of the large landowners whose land in most cases is left idle and unused, the objective of investors under the management strategy to purchase land will be to occupy what they have built. Other investors build to let the property.

### **The Role Of The Government**

The government stands out from the other principal actors because it is the only actor who is not seeking to profit financially from the development process though it may basically profit in other ways. The government has played, and is playing, an important role in the process of development and its role ranges from a supplier of land to a financier of development, in addition to its role in controlling development.

The intense diversity in the government agencies' roles in the development process significantly influences the land development process. There are several separate local bodies in each city, each dependent heavily on its respective central ministry. Since the latter has the power to raise and spend revenue, the local bodies strictly operate within functional and financial jurisdictions determined by their

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respective ministries. Moreover, most of the local bodies, which include the municipality, are concerned with one or another aspect of the land development. Under these circumstances, municipal efforts in controlling development may be fraught with difficulties. However, the newly passed basic system of government calls for the establishment of a Provincial Council which will help to improve coordination among the concerned agencies in land development. In fact, the institutional control in land development has shown very effective with the implementation of Urban Growth Boundaries (UGB) for cities and towns in 1989, which have successfully stopped land subdivision outside the UGBs.

Further, the most influential policy which can stop the subdivision of land is the power of eminent domain, which enables the government to acquire private land for public purpose after a fair compensation. The use of such power is limited to land needed for immediate public projects. Land acquisitions are not used to reserve land for donations or other public needs.

However, one of the major roles of the government is to create the conditions for land to be subdivided, particularly by providing access. Municipalities and the Ministry of Communications are the main institutions involved in the provision of roads. These two government units, together with other agencies concerned with the provision of services, provide a wide variety of public improvements. The location and quality of the services provided are very influential in guiding or inhibiting private land subdivision and development. However, lack of coordination between the various local agencies has led to the problem of leap-frogged development in many cities and the problem of high vacancy in serviced land co-existing with the unserviced built and occupied land.

A further precondition for subdivision is, at least ideally, that the area to be developed forms part of the growing built-up area; thus the existence of adjacent development increases an area's attractiveness. We have observed that, in practice, the capability of the municipality to direct and structure the growth of the city is difficult to achieve because of the fragmented responsibilities of the government bodies at the local level.

### **Key Events In The Land Development Process**

The previous section discussed the roles of the principal actors in the land development process and how these roles are inter-related. The landowner is generally considered to be the principal actor in the development process because he is regarded as the innovator and initiator of subdivision. The concern in this

section is to establish the key events in the process, to furnish guidance for the analysis of the land development process. This task is achieved by presenting a descriptive model of the development process that reflects the previous analysis. The aim here is to describe the key events by which vacant land is subdivided and developed and to describe the role of the actors in the key events (Figure 11).

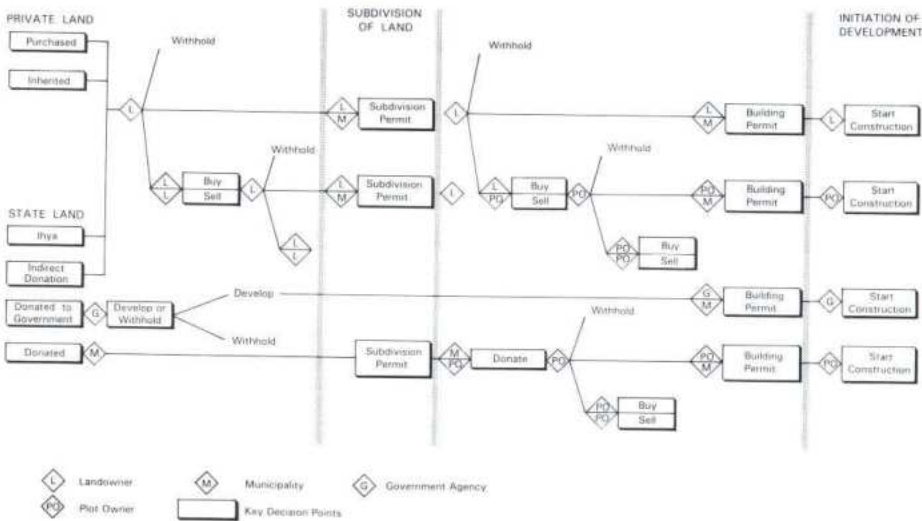


Figure 11: Model of the Land Development Process

Two key events can be recognized in the transformation of white land to developed land. Subdivision of white land is one of the two key events of the development process. The second is initiation of development. Subdivision of land is recognized as the most important, because white land cannot be developed unless it is subdivided. Each of these key events requires decision from the actors involved. These decisions are contingent upon three sets of variables: site characteristics, landowner characteristics, and contextual factors. The interaction among these variables influences the decisions of the actors involved in the process, therefore, there is no single sequence of stage that the land development process passes through, but various routes by which land is subdivided and developed. Figure 11 describes the various possible routes that white land may go through during the course of development. These routes may pass various nodes, which include points at which land is subdivided and developed. The nodes in the process are:

1. Sale of white land to another landowner.
2. Inheritance of land.



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3. *Ihya* of state land by a landowner.
4. Donation.
5. Application for subdivision permit.
6. Application for building permit.
7. The commencement of construction.

Each of these nodes requires a decision by one or more of the principal actors in the process. For example, obtaining a subdivision permit involves the municipality and the landowner, while start of construction involves only one actor, the plot owner or the landowner.

Any land in Saudi Arabia can be under private ownership or government ownership. The ownership of private land may be transferred by inheritance or purchase, while public land can be acquired by private owners through *Ihya* or donation.

On acquisition of the land by any of these processes, the landowner has three choices depends upon the landowner's investment strategy. If he decides to sell the land then the prospective buyer ends up with having a similar set of three choices. He may decide to withhold the land, leaving it either vacant or farming it, with a view to a later sale. However, if the landowner decides to subdivide the land, approval is required from the Municipality for the subdivision layout. Once the landowner obtains the subdivision permit, then he again has three choices, either to sell, withhold or develop some or all the plots. If he decides to withhold the plots, then these are kept vacant until the landowner decides to sell them. If the landowner develops the plots himself, then he has taken the shortest route to develop white land. If the landowner makes the third choice, i.e., to sell the plots, then he passes the three choices he had to the new plot buyer. Thus, the model recognizes the roles played by each actor, which can vary greatly, in the land development process. However, estate agents are intentionally excluded from the model because their involvement in the process depends upon the method of acquisition and sale that the landowner chooses. This descriptive model is constructed as a simplified version of the development process in Saudi Arabia, from which the actors that make the decisions which result in the subdivision of land and the initiation of development can be determined. Landowners are essentially responsible for land subdivision. Landowners who subdivide their land adopt a managerial strategy which contributes to the supply of subdivided land. Landowners' decisions to sell the subdivided plots are also vital and may affect the initiation of development, because if the plots are sold then other actors, principally plot buyers, are invited to play their role in the process.



The main idea of the model is that it does not assume that all sites follow the same course through development but that they can take different routes according to the role that the actors take in the process.

## **Conclusions**

Current understanding and description of the land development process in Saudi Arabia (SCET, 1980) seem incomplete. An improved version of the process (Goodchild and Munton, 1985) is suggested which attempts to explain the land development process by analyzing the roles of the various actors in the process: the landowners, estate agents, plot buyers, and the government. Landowners' roles in the process are dependent upon the investment strategy they adopt which includes operational, managerial and financial decisions. The roles of the estate agents depend upon the method landowners adopt in buying or selling land. Plot owners' roles are also dependent upon their investment strategy.

Accordingly, a descriptive model of the process which illustrates the roles of the actors involved in the three key events is constructed. The model recognizes that there are a number of possible routes that a tract of land may pass through during the development process. Further, it recognizes the variations in the role played by each actor in the process and identify the key events. The significance of the landowners' role in the process lies in their decision to subdivide land and to sell the subdivided plots. These decisions depend upon the investment strategy of landowners, which in turn is influenced by three other variables such as: site characteristics, landowner characteristics and contextual factors. The contextual factors which include the land use policy and land prices exert significant influence on the land market in Saudi Arabia.



# 7

## Housing Needs And Housing Development Strategy Alternatives

Saleh Al Hathloul and Narayanan Edadan

This chapter on Saudi urban housing market attempts an overview of urban housing sector in the Kingdom through an analysis of the housing development process and the structure of housing market. An analysis of urban housing sector is carried out first by investigating the housing development strategy and housing resource allocation policy followed in this country during the last 20 years and evaluating its implications on the structure of housing market and housing needs and secondly by examining the current and future pressures on housing market, particularly the housing supply to meet the future housing needs of the country.

Housing is one of the main urban challenges of the developing world. The rate of housing construction lags way behind the galloping population growth in developing countries. A UN study (1990) shows that while 42 houses were built for every 100 new households formed in 1970-74, it has decreased to 38 new houses per 100 households in 1985-89. As compared to this depressing trend of developing world, housing construction out-placed the household formation in developed countries and in the former eastern Europe during 1985-89. Saudi Arabia experienced a similar phenomenon during the last 15 years. However, there are indications that current and future pressures on housing demand and supply markets are likely to alter the past trend unless an efficient stock management and housing development strategy is implemented. This paper intends to examine these aspects of Saudi housing market in more details in the following sections.

### Housing Development Strategy

The United Nations Center for Human Settlements (Habitat) has estimated that world wide as much as 1.2 billion people live in poor housing and the Center predicts that the number will double by the end of this century. Since increasing economic constraints erode the capabilities of the governments in the developing world, much of the help is expected from the people themselves to solve the housing problem. It is, however, necessary to note that deterioration of social welfare package and the conservative trend in social policies have increased the number of homeless in many developed countries as well. It is estimated that 1 to 3

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million people in U.S.A. are homeless. Due to the cut back in social welfare programmes during the Reagan administration more than half a million people were dropped out of welfare rolls and a million flop house rooms were torn down (Levitas, 1990).

The strategy recommended by the international agencies for housing is generally referred as "enabling strategy" which is centred around the idea that governments should serve as "enablers" in the housing sector, drawing back from their role as "providers" of housing and playing a more forceful role in facilitating new construction by the private sector, mainly by creating an appropriate regulatory environment and ensuring the availability of housing finance (World Bank, 1988). This new approach is gaining more acceptance from the realization that government agencies do not respond more efficiently or faster than private markets but they can do much to mitigate or remove market rigidities and imperfections (Mayo, et. al., 1986).

The housing development strategy followed in Saudi Arabia is more in-tune with this strategy and the result has been very impressive. In contrast to the rest of the developing world the present challenge in the Saudi housing sector is not one of housing shortage but of managing the current housing surplus. Vacancy of built housing units and developed and serviced residential land is one of the main concerns facing almost all urban local bodies in the country at present (Al-Hathloul and Edadan, 1992b). The five year development plan document has recognized this phenomenon of housing vacancy when it states that:

"the excessive overall housing supply, with a large number of vacant housing units, both public and private, particularly in urban areas has significantly decreased the real estate and rental values in the Kingdom". (Ministry of Planning, 1990).

However, it is important to note that in the absence of regional level data on housing vacancy, it is difficult to ascertain the level and pattern of housing vacancy at the regional level. Since the above observations on the housing vacancy at the national level is based on the "stock concept" of housing needs, the "market accessibility" and the "housing standards" indicators of housing needs, i.e. in flow terms, are not taken into consideration.<sup>[1]</sup>

Moreover, the stagnation experienced in the housing construction industry during the later part of the 1980s is likely to reduce the housing supply and eliminate the housing vacancy in the coming years and push up the housing prices unless and until the country embarks upon a housing stock management programme by



rationalizing the public and private sector participation in housing market (Al-Hathloul and Edadan, 1992b). Another important future concern would be the regional inequality in the provision of housing finance. Since a significant amount of the new housing units constructed are Real Estate Development Fund (REDF) financed, spatial inequality in the provision of REDF loan could lead to significant regional imbalance in the housing adequacy in the country. The strategy to meet the housing needs of the future should, therefore, be governed by the balanced trade-off between economic efficiency approach and social justice (equity) approach in the allocation of housing finance in the Kingdom. The paper shall reflect on these conceptual and policy dimensions in the latter part of the paper.

### **Housing Development Process And Plan Performance**

The existing phenomenon of housing surplus in the housing market has been the result of an evolutionary process of housing development strategy followed by the government. The primary objective of housing development in the Kingdom during the past four five year development plans was to provide decent and affordable dwellings to all households in the country and to develop housing within the orderly pattern of urban growth with adequate and effective institutional framework. Even though, housing has primarily been considered the domain of the private sector, the role of government in housing was flexibly formulated to meet various housing challenges during the last two decades. Housing development strategy, therefore, has gone through phases of *laissezfaire* policy in the 1960s, the active and direct public sector housing for low income groups and public sector employees in the 1970s and the indirect and coordinative housing development strategy in the 1980s (Fadaak, 1989).

The implementation performance of housing programme during the earlier plans is remarkable by any standards. The market rigidities experienced during the First Plan were removed with the setting up of appropriate institutions such as the REDF and the Ministry of Public Works and Housing. A total of 889 thousand housing units were constructed during the last four plan periods, against the target of 880 thousand, generating housing surplus, particularly in the urban areas, by the latter part of the 1980s (REDF, 1989). The newly built units during the last two decades constituted a basic component in the housing stock that it could accommodate as much as 47% of the national population and 64% of the total urban population (Al-Hathloul and Edadan, 1992b).

## **Economic Contribution Of Building Industry**

In the absence of housing sector classification in the national income statistics, the nearest sectors that are related to the housing sector are the construction and real estate sectors. Construction sector has been a major sector in the five year plans, particularly in the development strategy of non-oil sector growth and diversification. In addition to its potentials to induce economic growth, the growth and distribution of construction sector has been viewed as a means to promote the distribution of national prosperity to larger sections of the population. The relationship between the growth of construction sector and the national economic growth was so close that the cyclical movements in construction sector were considered as pointers of national economy during the early phase of development plans.

The economic contribution of construction sector, both in value added and employment, during the last 20 years has been very significant. The value added share of construction sector had increased from 3.2% in 1969 (at 1984 prices) to 13.4% in 1989, registering an annual compound growth rate of 11.6%. This growth as compared to the national growth rate of value added (4.5%) was remarkable. The economic contribution of construction sector was more impressive at the non-oil sectoral level; during the construction boom of the 1980s this sector had contributed nearly one-third of the national non-oil gross domestic product (GDP) (Ministry of Planning, 1990).

The employment contribution of construction sector was equally impressive. While the employment contribution of construction sector to the national civilian employment was 12.8% in 1969, it had increased to 28% in 1985. The economic rationalization and consolidation strategies followed during the Fourth and Fifth Five Year Plans had slowed down the construction boom and as a result the employment contribution of this sector is now pegged at 16%. Even though the employment growth in this sector had decreased from 16.8% during 1969-1985 to 9.95% during 1969-1990, the high growth in the value added indicates higher labor productivity in this sector as compared to the national economy (Ministry of Planning, 1991).

Similar to the construction sector, the growth of real estate sector was mainly determined by the growth in oil revenue. The GDP contribution of real estate sector had grown from 2.9% during 1975-80 to 3.7% during 1980-85. However, it decreased to 2.2% during the 1985-90. The main reason attributed to this poor performance was the stagnation in housing demand experienced in the country during the latter part of 1980s.

The economic contribution of housing sector could be better understood through the analysis of household expenditure on housing and housing furniture. The cost of living index statistics indicates that average middle income household spend as much as 40% on housing and housing furniture. The average household expenditure on housing alone had increased from 23% in 1979 to 28% in 1983 (Central Department of Statistics, 1987). Due to the imputed rent valuation and commodity grouping it is difficult to isolate the household expenditure share of house rent. An old survey on household expenditure on housing indicates that urban household spend about 14% of total expenditure on housing rent [Saudi Industrial Development Fund (SIDF), 1987]. Based on the above indicated rental and housing expenditure pattern it could be estimated that the rental market in the country was to the tune of SR 13.6 billion (US\$ 3.63 Bls.) and the total annual household expenditure on the housing commodity (housing + housing services) was to the tune of SR 28 billion (US\$ 7.47 Bls.) in 1990.<sup>[2]</sup> The above estimates, in spite of their loose assumptions, indicate approximately the size of housing rental market and its cash flow implications to the national economy.

### **REDF Finance And Housing Needs**

The establishment of REDF with an initial capital of 250 million Saudi Riyals (US Dollars 71 Million) to provide long term interest free loans<sup>[3]</sup> is one of the main government initiatives that changed the structure of housing market in the Kingdom. The performance of the REDF has been exemplary; since 1975 it has distributed 88.4 Bl. Saudi Riyals (US\$ 23.5 Bls.) for the construction of 440,446 housing units, against a planned target of 331,000 units (REDF, 1989). The REDF loan serviced about 76% of the private housing units built during the 1970-90 plan periods (Ministry of Planning, 1990).

The performance of REDF to finance the private sector housing market has been exemplary. However, a review of REDF loan criteria suggests that the REDF impact on the regional housing needs in the Kingdom could have been more equitable if the loan allocation is done based on the real housing needs of the regions. Since one of the main objectives of REDF is to increase the private housing stock in the country, such that housing needs of all sections of the society across all regions could be met efficiently, it is obligated to provide institutional finance to private housing for new housing or for reconstructing an existing house owned by the applicant and also to provide investment capital for housing complexes, office building and shopping centres.

The loan criteria followed by the REDF do not target any particular social



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groups or regions. The only criteria is that the loan beneficiary should be a Saudi citizen of at least 21 years old. The loan beneficiary must show that he/she did not enjoy the REDF loan before. In short, the REDF at present practice a "first come first serve policy". The only spatial differentiation implied in the policy is that the amount of loan per application is gauged to the size of the settlement in which the home is to be built. In larger cities the maximum loan value granted is about 300,000SR (US\$ 80,000), 250,000 SR (US\$ 67,000) for town dwellers and about SR 200,000 (US\$ 53,000) for persons from smaller settlements.

### **Implications Of The REDF Policy**

Since the REDF loan eligibility is not regional housing needs specific, it could be assumed that the total number of loan applications and the percentage of loan sanctioned is influenced by the size of the settlements, and therefore, a larger percentage of the housing loan would have gone to high cost larger urban centres which are more developed and, therefore, more demanding.

A review of loan approval criteria indicates that the impacts could have been more equitable if the loan allocation at the regional level is based on the estimated regional housing needs instead of the present policy of allocating the loans based on the size of the applications (housing demand). Since the amount per loan sanctioned across cities of the same size category is same, the policy generates the same amount of housing units for a given resource allocation, but will have differential housing subsidy impacts, subsidizing a larger percentage of household's housing cost in the backward regions than those in the rich developed regions. In spite of this equity impacts, the fact remains that the present REDF loan policy is housing demand oriented than housing needs oriented. Since the developed regions comparatively have more competitive edge than the backward regions to access the loan opportunities, we can hypothesize that a loan allocation policy based on housing needs rather than housing demand, would have generated a higher level of housing consumption performance than what is achieved.

Following implications could be deduced out of the present REDF loan policy:

1. Larger share of loan applications are originated from the highly urbanized and developed regions, i.e. the regional level housing needs and the housing loan allocation are not related.
2. Since a larger share of the approved loans would have gone to the high cost developed regions it would reduce a lower share of the total housing needs of the country, as compared to an economic efficiency or a regional equity



based housing fund allocation strategies. [4]

### Regional Distribution Of Housing Finance

Available information on the regional distribution of REDF loan indicates marked inequality in its spatial allocation. Table 20 indicates that 3 major regions; Makkah, Riyadh and Eastern Region, which shared about 51% of the national Saudi population in 1989 appropriated about 65% of the total number of housing loans and 69% of the total housing loans in value. Among the regions, Makkah has appropriated a larger share of REDF loan. While Makkah shared about 21% of the national Saudi population in 1989, it has appropriated about 38% of the total housing loan. As compared to the major urban regions, the southern *emirates* of the country comprising Al-Baha, Asir, Jizan and Najran have benefited the least. These *emirates* with 24% of the national Saudi population appropriated only 8% of the total housing loan during 1975-89.

Table 20  
Regional Distribution of REDF Loan

No.	Regions	Percentage share of loans (nos)	Av. loan value ('M1 SR)	% of Saudi population
1	Makkah	33.7	38.3	20.9
2	Riyadh	15.7	15.8	18.3
3	Jizan	1.9	1.2	5.8
4	Eastern Region	15.3	14.6	12.4
5	Asir	5.3	4.8	12.1
6	Al-Qassim	7.7	7.7	4.9
7	Hail	3.6	3.8	4.5
8	Madinah	6.5	6.5	7.8
9	Al-Baha	1.1	0.8	3.4
10	Norhtern Border	2.7	2.5	1.9
11	Tabuk	2.2	2.1	4.3
12	Najran	1.1	1.1	2.0
13	Al-Jouf	2.2	2.3	1.2
14	Qurayyat	0.9	0.8	0.5
15	Total	100.0	100.0	100.0

Source: Al Makky G. Makky, 1990

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The regional inequality in the housing loan allocation was clearly brought out through the measurement of various inequality indices. Using the Index of Segregation Index (S), Gini coefficient (G) and the Fair-share index (F), Makky (1990) has shown significant level of inequality in the regional allocation of housing finance, though the trend seems more encouraging from 1987-89 onwards.<sup>[5]</sup> This pattern of regional inequality indicates the urban bias of the present REDF loan policy and the absence of any clear approach on the part of REDF to link its housing loan allocation policy with the primary national housing development strategy of meeting the total housing need requirements of the Kingdom.

The absence of regional housing needs dimension in the REDF policy could not be shown more clearly in the absence of regional housing needs data. However, the second five year plan estimate on housing needs in 1975 indicates that the housing needs of Western and Eastern Provinces were very high and together they shared about 77% of the total housing needs of the country. The comparison of housing needs and the allocation of REDF loan as well as the share of loan, loan applications (Table 21) indicates that the REDF allocation has benefited the Central and Western Provinces. One of the biggest losers, is the Eastern Province.

*Table 21*  
*Housing Needs and REDF Loan Allocation by Province*

Sl. No.	Province	Estimated Total Housing Needs in 1975	Percentage	Percentage of Total Loan Applications	Percentage of Total Sanctioned Loan Value
1	Central	54,000	16.4	33.5	23.5
2	Eastern	125,000	38.0	15.4	14.6
3	Northern	5,200	1.6	15.3	9.2
4	Western	129,000	39.2	23.7	45.6
5	Southern	9,000	2.8	12.1	7.1
Total		329,000	100.0	100.0	100.0

*Source: (Ministry of Planning, 1975) and Table 20*

While in 1975, the regional housing needs of the Eastern Province comprised of 38% of the national housing needs, the province has appropriated only 14.6% of the total REDF loan. The comparison of loan applications and the loan allocation

again indicates that the Western Province has gained more than other provinces. These observations indicate that the REDF loan allocation is largely based on the market condition reflected through the urban population size and purchasing power of the regions. The analysis indicates that the REDF loan policy could be enhanced if the housing need requirements of the regions are considered as one of the criteria in the housing fund allocation policy.

### **Impacts On The Structure Of Housing Market And Residential Location**

Frank De-Leeuw and Struyck Raymond (1977) have attempted to simulate the impact of different types of housing subsidies on housing market. The housing construction subsidies have generated an upward shift in demand for good quality housing (the tax to finance the subsidy if any. will moderate, but not eliminate the shift), and a decline in the demand for poor quality housing which subsequently have resulted in their price decline. This decline have withdrawn the poor quality of housing segment from the market, resulting in their demolition.

The impacts of the housing subsidy provided by the REDF in Saudi Arabia and particularly in Riyadh seems to follow the observations by De-Leeuw and Raymond as indicated in a recent study conducted by Telmesani (1989). Using the co-variance and regression analyses, Telmesani has observed that the relationship between the housing consumption and household income is positively related among higher income groups. The relationship between the housing consumption and REDF loan has shown a similar pattern, indicating that the REDF loan influences the housing segment of the higher income group and thus the quality of housing more than the quantity.

Similarly, the REDF loan and the government land grant policy have important implications on the housing consumption, residential location and the housing structure of city down towns in the country. Telmesani's work (1989) has empirically substantiated that there has been a shift in the lower and middle income households to the low land value urban peripheries and a concentration of upper income households in the high land value inner-suburbs. The implications of this residential location behavior are: poor quality housing and decreasing rental values in the down towns, high-rate of demolitions of poor quality housing in these areas, increasing land and rental values in the inner suburbs and the emerging pattern of a dual or multi-nuclei urban form.<sup>[6]</sup>

These observations indicate that the REDF should rationalize its loan policy to meet the "housing need requirements" of the country. Rationalization of housing

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loan policy demands that the concept of "housing needs", "measurement of housing needs" and "the strategy alternatives of resource allocation" should be studied and their policy implications are understood at the institutional level. The following section presents a brief discussion on these aspects of housing policy.

### **The Concept Of Housing Needs And Housing Fund Allocation Policy Implications**

The concept of housing needs could be expressed in stock or in flow terms. While the stock concept expresses the housing needs as the total quantity of housing that is required to accommodate the additional number of households with a given standard of housing, the flow concept reflects the deficit between the actual supply of housing of the required standards and the actual housing requirements. The flow concept has been the focus of housing policy and this concept implies that the housing stock is defined as a net concept.<sup>[7]</sup>

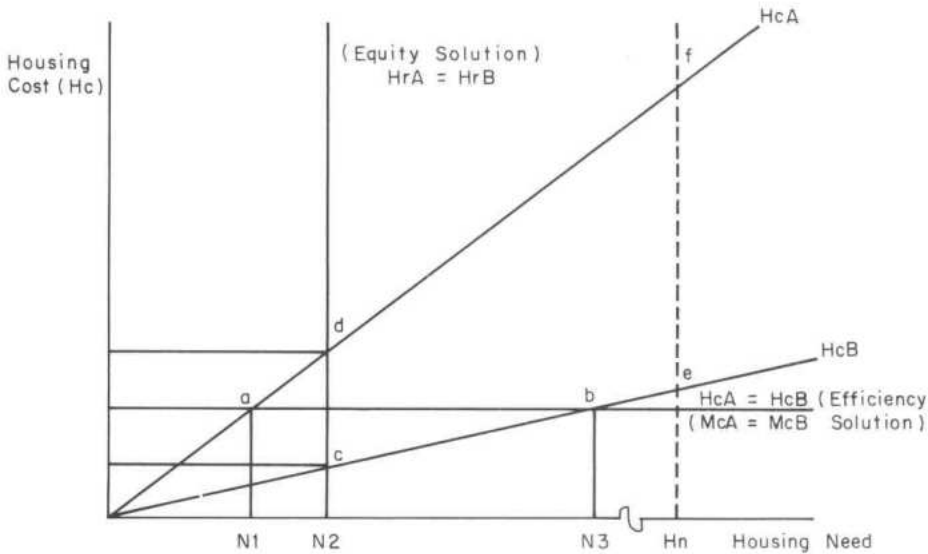
The flow concept, moreover, indicates that the housing needs should be measured through a consensus approach that balances the "social decision-maker approach" and the "consumer preference approach". While the "social decision-maker approach" provides the view points of the decision maker and the housing professionals about the "additional housing units required", "criteria of required housing standards", and the "clearance rates" based on the resource constraints of the society, the "consumer preference approach" provides a better understanding on the "social preference" and "accessibility of housing". The major components of the housing needs thus derived could be;

- a) Additional households and those with no access to accommodation,
- b) Access to accommodation of less than the required standards,
- c) Access to accommodation which may be of required standards, but may be in an unacceptable neighborhood.

An important step in formulating housing policy is to derive the housing need measurements and then to develop a mechanism for the resource allocation between regions. In the event of fund deficit to meet the total national housing needs it is essential that the financial institution formulates a resource allocation approach that is consistent with the national development strategy. The two main concepts of resource allocation frequently mentioned in the Saudi national development plan documents are efficiency and equity. A brief discussion of these two resource allocation approaches in the context of housing loan allocation policy using the classical framework would throw some light on the implications of these approaches with



respect to the housing needs. These implications are discussed through Figure 12.



1. Equity Policy =  $HrA = HrB$  ;  $HcA > HcB$
2. Efficiency Policy =  $HcA = HcB$  ;  $HrB > HrA$
3. REDF Policy =  $HcA > HcB$  ;  $HrA > HrB$

Implications : (1)  $(N2c + N2d) = (N1a + N3b)$ , but  
 (2)  $(N1 + N3) > \text{twice } N2$ ;  
 (3) Deficit in total Housing Needs =  
 $[Hn - (HrA + HrB)] > (Hn - N2) > [Hn - (N1 + N2)]$

*Figure 12: Alternative Housing Resources Allocation Policies' Impact on Housing Needs*

The Figure 1 shows that the resource required to meet the total housing needs of the Kingdom ( $Hn$ ) is ' $Hne$ ' + ' $Hnf$ '. Since the total required funds may not be available, the country has to choose between alternative allocation approaches. These choices in classical approach are either based on efficiency or equity notions or a combination of the two.

Under the equity approach housing needs targeting is based on the equalization of the total number of housing units or a given percentage of total housing

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needs requirement in all regions ( $H_r$ ). If we assume two regions A and B, it means that ' $H_{rA}$ ' = ' $H_{rB}$ '. For a given amount of funds a resource allocation which builds on the notion of equity would involve the use of funds such that an equal level of housing needs is achieved in both regions. Based on the assumption that housing cost ( $H_c$ ) vary across regions, and if  $H_{cA} > H_{cB}$ , it means that the total housing needs target of  $N_2$  and the reduction in housing needs ( $H_n - N_2$ ) in both regions will require  $N_{2c} + N_{2d}$  funds.

The efficiency solution primarily means that equal amount of loans are given to both the regions till the marginal cost of housing in both regions are same, i.e.  $M_{cA} = M_{cB}$ . Thus in terms of Figure 12, the outcome would be a level of housing needs of  $N_1$  for region A and  $N_3$  for region B, and the total number of housing needs satisfied will be  $N_1 + N_3$ , which is more than twice  $N_2$ . Total funds used are the same as in equity based approach, that is  $(N_{1a} + N_{3b})$  equals  $(N_{2c} + N_{2d})$ . The efficiency approach, therefore, achieves a larger percentage of housing needs with the same amount of national resource. This approach is more desirable than the equity based approach as far the housing needs objective is concerned, but in reality a compromise between the efficiency and equity approaches could form the basis of resource allocation policy.

As compared to the equity and efficiency notions of resource allocation, the present REDF policy primarily benefits the developed urban regions. The implication of the present "first come first serve" loan application approval policy is that the reduction in the total housing needs achieved is less than the housing needs reduction achieved either under the efficiency or equity approaches of resource allocation. The above analysis indicates the need on the part of the REDF to formulate a loan policy by taking into consideration criteria such as; the "size of regional housing needs" and the "housing cost regional variations". A compromise between the equity and efficiency notions of resource allocation would be a desirable policy change for REDF to meet the housing needs objective of the national plans.

## **Pressures On Housing Demand And Supply Markets**

Housing demand expresses itself through the process of household formation. When households initially form, they are likely to move into existing dwellings (especially existing rental dwellings) than into new dwellings. These households may later seek to purchase a home, but when they do, they are also more likely to purchase a new dwelling or construct a new dwelling unit. In Saudi Arabia only a small percentage of Saudis rent houses. In Riyadh for example about 67% of Saudi households own their houses.

*Table 22*  
*Household and Housing Characteristics in Riyadh, 1986*

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a) Percentage of nuclear families among Saudis		67%
b) Percentage of married Saudi males to total Saudi males (> 12 years)		49%
c) Percentage of married Saudi female to total Saudi females (>12 years)		58%
d) Percentage of school going children		40%
e) Percentage of independent dwelling units to total dwelling units		57%
f) Percentage of rented housing units		51%
g) Percentage of dwelling units under disrepair (poor condition)		8%
h) Average number of rooms/dwelling:		
	1968	3.9
	1986	6.0
i) Average number of persons/dwelling:		
	1968	5.4
	1986	6.3
j) Annual growth of net in-migration of Saudi households		1.8%

---

*Source: Arriyadh Development Authority, "Residential Survey," 1987*

The market for new dwellings is dominated by repeat buyers moving from established dwellings. Such households fall into three categories: those moving to a new location for employment or other personal reasons; those 'trading-up' to larger dwelling; and those moving from a family home to a smaller dwelling units such as flat or town houses (a process sometimes described as 'trading-down' or 'downsizing'). In Saudi Arabia new dwelling purchasers mainly fall in the first two cate-

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gories. Either due to the life long preference evinced by many Saudi households for detached larger dwellings or for investment reasons a larger proportion of older couples do not vacate their family homes after their dependents have left to form separate households. This means that the proportion of established family homes available to younger households is often relatively small, encouraging them to seek to purchase new dwelling on the fringe, rather than to established larger dwellings in the inner or middle suburbs. This factor leads to the phenomenon of 'doughnut-effect' in which population growth is concentrated in the outer suburbs, while the population of the inner and middle ring declines as a result of falling average household sizes in those areas, exerting pressures on existing housing supply as well as on urban residential land. In Riyadh, for example, persons per dwelling unit has shown an increasing trend towards periphery.

The 'trading-up' as well as the 'trading-down' segments of housing market is influenced by factors such as location, dwelling type and cost. These factors interact to create a range of housing sub-markets. In addition to the 'trading-up' or 'trading-down' segments, other important segments of housing market in Saudi Arabia are the rural housing market and public housing (employee housing and low income subsidized housing). The bulk of new dwellings are constructed to satisfy the demand of the new households, either Saudi households or expatriate households, as well as the 'trading-up' segment of the market. Rental market is an important segment of Saudi housing market, primarily developed by the Saudi investors for expatriate households. Lack of other safe investment opportunities increases the investment viability of real estate projects. In Riyadh the rental income constituted as much as 25% of the non-wage income of the Saudi households in 1986 (ADA, 1987).

These characteristics of housing market indicate that construction of new dwelling units, to accommodate the 'filtering process' and the rental segment, which form important segments of the housing demand market, is influenced by demographic factors such as marriage rate, family structure, mobility of people, size of expatriate population, the housing preferences and affordability of the people.

### **The Structure Of Future Urban Population**

As discussed earlier the underlying demand for housing depends on the size of population and the way it forms into households. While the household structure is determined by the age-sex composition, social and personal choices, the structure of housing demand depends upon the cost of dwellings, locational factors, social preferences of the housing types, dwelling supply opportunities and investment considerations.



Many studies have indicated that the Saudi population in urban areas grow at the rate of 6 to 7% per annum and the total population could double within 11 to 12 years for many cities (Al-Hathloul and Edadan, 1991, Al-Ankary and El-Bushra, 1989). Demographic imperatives such as the high percentage of population in the early segments of the age pyramid, high percentage of unmarried youth, increasing literacy rate and the economic affordability, etc., as observed in Riyadh, could lead to the high rate household formation in the country (Table 23). The liberal expatriate family entry policy followed by the Saudi government provides more incentives for the non-Saudis to bring families.

*Table 23*  
*Population Growth Profile of Riyadh, 2000*

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a) Percentage of saudi households	61
b) Saudi population doubling period, if based on natural population growth	15 years
c) Saudi population doubling periods, if based on natural population growth and net in-migration	11 years
d) Annual growth of saudi population	6.5%
e) Annual growth of non-saudi population during 1977-1986	9.85%

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*Source: Arriyadh Development Authority, 1987, ibid.*

### **Impacts On Housing Demand**

The direct impacts of increased household formation is felt in the housing demand. Even though, many cities in Saudi Arabia experience high vacancy of built housing units, the increasing housing demand coupled with the prevailing stagnation in the housing supply market is likely to mop up the housing surplus by the year 2000 (Al-Hathloul and Edadan, 1992b). This phenomenon is mainly attributed to the reduction in REDF loan and the stagnation in the housing market resulting from the economic recession the country experienced since the Fourth Five Year Plan period (1985 - 1990). In Riyadh, for example, the city is likely to experience housing deficit to the extent of 3.6% by the year 2000 (Table 24).



grammes implemented by the municipalities (Ministry of Municipal and Rural Affairs, 1989) and the increasing land and building costs would encourage the households to move to high density areas and accept innovative types of dwelling units, with affordability as the main criteria for dwelling choice.

### **Pressures On Future Housing Supply**

One of the main factors, besides the growth of residential construction industry, that will have significant impact on the housing supply is the availability of developed residential land. It is a known fact that almost all urban areas in the country have significant amount of vacant developed land (Ministry of Municipal and Rural Affairs, 1989).

*Table 25*

*Urban Land Vacancy and Residential Occupancy in Riyadh, 1986*

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a) Total developed land as % to total city area	28.9%
b) Percentage of vacant land which is serviced	43%
c) Average gross residential density (Dwelling units/Hectare)	3.5
d) Net residential density (Dwellings/Hectare)	34
e) Potential additional dwelling units that could be accommodated in the existing vacant land shown as a % to the existing stock of dwelling units	63%
f) Average number of vehicles per household	1.3
g) Percentage of Saudi households owning more than one vehicle	39%

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*Source: Arriyadh Development Authority, 1987, ibid.*

The urban growth limit policy is envisaged to play an important role in this respect. This policy is aimed at limiting the urban sprawl by phasing the provision of urban physical infrastructure. The strategy of urban consolidation and densification implied in this policy is primarily aimed to utilize the existing capital investments more efficiently. A direct impact of this strategy is the regulated growth of the urban residential subdivisions and supply of developed residential city land in the

## *Housing Development Strategies*

fringes. This policy initiates a process of private sector participation in the provision of physical infrastructure and thus intends to make the residential construction industry more competitive. The long term implication of these development policies could be an increase in the cost of developed land and dwelling units in the suburbs.

### **Major Challenges In Housing**

One of the main objectives of the future national housing development strategy should be not only to increase the housing stock by restructuring the housing finance to meet the housing needs at the national level but also to remove the barriers which are preventing the provision of a more diverse range of dwelling types at affordable prices. The future pressures on housing demand and supply thus indicate that the urban housing market in the country faces a number of challenges, such as;

1. To ensure that the housing finance is extended to new and old dwelling units efficiently across all regions of the country and the REDF follow an efficient resource allocation approach which is consistent with the housing needs objective of the national plans.
2. To ensure that the housing construction and residential land development industry is able to provide a wide range of housing products as efficiently as possible to meet the housing demand.
3. To remove the institutional and regulatory barriers to the demand for higher density types of dwelling units. The challenge needs to be addressed within the demographic imperatives and social values in the household formation process, the pressures from the 'trading-up' and 'trading-down' housing segments and the urban sprawl containment process.
4. To release the housing units and developed land, at present not available to the supply market, by diversifying the investment opportunities in the economy as well as by restricting the speculative behavior through the implementation of appropriate fiscal policies.
5. To strengthen the role and ability of local governments to ensure affordability and appropriateness of housing through the formulation of:
  - a) Planning Responsibilities, which can include the ability to set various



- by-laws, codes and regulations and to initiate specific planning schemes and agreements,
- b) Development controls; such as the ability to determine allowable densities, height, building materials and open space provisions, etc.,
  - c) Subdivision Controls; including the ability to determine allotment sizes and infrastructure standards such as road widths, and plot's shape, etc.
  - d) Building Regulations, which ensure the health, safety and integrity of buildings.
6. To increase the public awareness on the wide range of housing types through public education and incentives to private sector.
  7. To ensure that the urban infrastructure is provided and managed in a manner consistent with the objectives of economic efficiency, social justice and environmental sustainability.

## **Conclusions**

The performance of national housing strategies implemented in Saudi Arabia during the last four five-year development plans has been very impressive. The housing shortage of early 1970s was transformed into housing surplus by the end of the fourth five-year plan. However, excessive over supply of built housing units and high vacancy of developed urban land have accentuated the problem of urban sprawl in almost all large cities in the Country. Among the institutional factors influencing the demand and supply markets of housing, the housing loan policy of the Real Estate Development Fund is the most critical.

Studies have shown that the "first come first serve" policy of the REDF has benefited the larger cities and it lacks regional level housing needs considerations. As a result, the performance of the REDF loan policy is less efficient in order to meet the total housing needs requirement of the Country. An evaluation of the present REDF loan allocation policy indicates the need on the part of the REDF to formulate a loan policy by taking into consideration criteria such as, "the size of regional housing needs" and the "regional variations of housing cost".

The argument to re-structure the housing development strategy is supported by

## *Housing Development Strategies*

the future housing demand and supply market challenges the country is likely to face. Since the existing supply rigidities and demand pressures in the urban housing market are likely to generate housing shortages during the coming 10 years, the decision-makers are urged to few imperative housing policy considerations. These are: extension of the REDF loan to various housing segments, regional housing needs considerations and cost efficiency considerations in loan allocation approach, inducements to increase housing products and private sector participation in urban land and in housing development, institutional supports to urban densification and urban growth containment, and programmes to increase households' affordability to housing, etc.

### **Notes**

- [1] In a highly speculative urban residential land market such as the Saudi urban land market, accessibility of housing to the people who are in need should be an important housing development strategy consideration. While the stock concept of housing supply and housing needs provide information on the supply status of the housing market, the flow definition of these concepts are needed to understand their "accessibility" and "social desirability" dimensions.
- [2] The national population is assumed as 14.2 million in 1990 based on the UN estimate. (However, according to the 1992 Census the national population is 16.9 million with 72.7% Saudis). The above estimates are based on the assumptions of 14% household expenditure on house rent and 28% of household expenditure on housing expenses (imputed value for rents for owned and rented units + fuel + water).
- [3] Repayment of the interest free loans is done in installments with the first payment due two years after the loan is disbursed. Incentives such as 20% discounts on each installment and an additional 10% reduction for payment of the total loan balance, if the payments are made on or before the due date, have increased the loan receipt and repayment performance.
- [4] The analysis distinguishes between the practice of centralized approval and disbursement of housing loans to applicants, as practiced by the REDF at present, and the system of allocating the required housing fund to the local agencies based on alternative resource allocation policy as prevalent in large number of developed and developing countries.

- [5] The analysis has shown the following distribution of inequality measurements during 1975-89. The Gini coefficient (G) is 28.4, the Segregation index (S) is 21.8 and Fair-share index (F) is 63.9. A temporal analysis of these indices have shown that the inequality has reduced in 1987-89 (G=26.2, S=19.1 and F=79.4). The increasing value of F index, both in total number of loans and total loan value during 1987-89, however, indicates that higher share of loans have gone to fewer regions and this trend, therefore, reduces the strength of Makky's argument that the regional inequality is reducing.
- [6] Another equally significant factor influencing the structure of housing market and the residential location in the current state of urban land development policy, the system of public land grant and the building regulations. The problem of unorganized and sporadic urban growth is compounded by the current urban land grant policy. In its eagerness to solve housing shortage, particularly among limited-income group, the government has distributed large amounts of land to people throughout the Kingdom. Since the ownership of land is a pre-condition for the receipt of the REDF loan, over 80% of the REDF loan borrowers have benefited from the free government lands grant policy. Often these lands are located in the urban peripheries and this phenomenon accentuates the "outward pull" of low and middle-income groups to locate their houses in the urban outer areas.
- [7] The computational elements of the housing stock in flow terms could be expressed as follows:

$$Hs_t = Hs_{t-1} + (Hb_t - Hc_t); \text{ and}$$

$$Hc_t = Hd_t + Hpq_t,$$

Where;

$Hs_t$  = Housing stock in the year 't'

$Hb_t$  = Housing units built in the year 't'

$Hc_t$  = Housing cleared in the year 't'

$Hd_t$  = Housing units demolished in the year 't'

$Hpq_t$  = Housing units identified as below the  
required standard in the year 't'





# 8 Urban Structure And Determinants Of Residential Location: A Case Of Riyadh

Abdullah Telmesani

The debate on Islamic and Arab Cities has been going on endlessly among scholars of Islamic Architecture, historians, and urbanists. Many have studied the urban environment and architectural features of old cities in Islamic Countries, trying to establish viable definitions or a theory of urban structure for these cities.

Many were fascinated by the bazaar, the residential quarters, the trifold division of space into private, semi-private and public areas, and other elements, hoping to find a comprehensive explanation for the repeated use of those element, throughout Muslim Cities.

Meanwhile modern Arab Cities have been undergoing extensive growth and evolution. Urban scholars and city planners are divided between theories on traditional Arab and Muslim Cities, and the realities of modern Arab-Muslim cities with their complex urban, technological, social, economic and institutional components.

The aim of this paper is to conduct an empirical analysis of the urban structure of a contemporary Arab City namely Riyadh, Saudi Arabia, and the determinants of residential location. The role of the Saudi Real Estate Development Fund (REDF) loan is also studied in terms of its impact on residential location as well as the growth pattern of the city as a whole.

The study is based on the proposition that the inapplicability of modern models of urban structure and residential location to some cities in developing countries is mainly related to their preindustrial socio-economic structure and technology rather than to their differences from the western culture within which the models were developed.

To demonstrate this proposition in the case of Riyadh, Saudi Arabia, several research hypotheses were developed, the major thrust of which is that the transformation of the city from a small preindustrial town to a modern metropolis means that its urban structure and the determinants of residential location are broadly

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explained by the monocentric model of urban structure. The deviation of the city's urban structure and residential location determinants from the monocentric model are related to the inapplicability of some of the model's assumptions to the city.

The choice of the city of Riyadh as the field of study provides the opportunity to examine the factors involved in the shaping of a city in a developing country which has experienced a rapid economic and spatial growth. It also allows for insights into the impact of governmental housing-construction subsidies on urban growth and residential location. The availability of sufficient data, which was kindly provided by the Arriyadh Development Authority (ADA), has provided the opportunity to study these phenomena in sufficient detail.

The paper is divided into seven sections, sections 1 and 2 present a review of the literature related to the subject, and accordingly nine research hypotheses are formulated. Section 3 studies the city of Riyadh in light of the pre-industrial city model. Section 4 provides the empirical testing of various hypotheses for Riyadh.

Section 5 provides elements of a preliminary theory explaining the actual forces behind the distribution of various socio-economic groups, and factors influencing residential density and land rent gradients within the city of Riyadh. Section 6 explores the possibility of generalizing the research findings to other major Saudi cities and finally Section 7 discusses the urban development and policy implication of the urban structure and activity location pattern observed in the study.

## **Theoretical Foundation**

The development of a consistent theory for explaining the characteristics of the city of Riyadh's urban spatial structure and the factors shaping current residential location draws from three inter-related subjects: 1) the theories and models of urban spatial structure and residential location, 2) the spatial impact of housing construction subsidies on residential development and urban growth patterns, and 3) the relevance of the theories of urban structure and residential location to cities in developing countries. Each of these subjects is briefly explored.

### **Theories And Models Of Urban Structure And Residential Location**

The theories of urban spatial structure and residential location are primarily developed in response to the concern about land values and their distribution within urban areas and their impacts on the location of urban activities.

The theory of agriculture rent and land use initially developed by Ricardo (1819) and Van Thunen (1826) was later applied to urban areas by Hurd (1903). Hurd's theory was further developed by Haig (1927) who argued that rent is the payment collected by the owner of urban land for the savings in transportation cost made possible by the use of that land. Regarding residential development, Haig argued that the main factor influencing residential location is the desire to minimize transport cost or "friction of space."

While economists were attempting to give satisfactory explanations for the distribution of land values and the location of urban-sub-areas in light of the market mechanism, sociologists were dealing with the same problem using Hawley's theory of human ecology. The ecological theory of urban structure initially developed by Burgess (1926), sees land prices determined by the competition between potential users of the land, a process which, in effect, determines the various land uses in the town (Darin, 1977).

In the early 1960s, Burgess and Hoyt's theories were given a new dimension by William Alonso, whose model of urban structure revived Von Thunen's tradition. Alonso's work was followed by numerous theoretical and empirical works by scholars who attempted to explain phenomena of urban land use by means of economic relationships, commonly referred to as the monocentric model of urban structure and residential location.

### **Monocentric Model Of Urban Structure And Residential Location**

Monocentric models of urban structure and residential location all share a set of simplifying assumptions. These assumptions include: 1) the city is monocentric; 2) the city has a homogeneous space, with transportation available in all directions, and is also free of congestion; and 3) there are no externalities. Hence, the only spatial characteristic of a location that matters to the households is its distance from the CBD.

Following the pioneering work of Beckmann (1957), Alonso argued that households, unlike firms, do not seek to minimize their total transport cost. Rather, they seek to maximize utility with regard to distance ( $t$ ) from the place of work (assumed to be in CBD for all households), housing consumption ( $q$ ), and composite goods ( $z$ )<sup>[1]</sup>.

To find a solution to the residential location problem, Alonso established what he called the bid-rent function which represents the expenditure a household is willing to pay for alternative levels of land consumption or accessibility while

### Residential Location Model

remaining within its budget constraints and holding its utility constant.

Having an assumed rather than an indigenous rent gradient, the relative location of various households within the city is obtained by ranking the bid-rent functions of various households by their degree of steepness with a reference point on the fringe of the city where the land value equals the opportunity cost of rural land (Figure 13). An iterative procedure is then followed until aggregate demand and supply are at an equilibrium and all households are located.

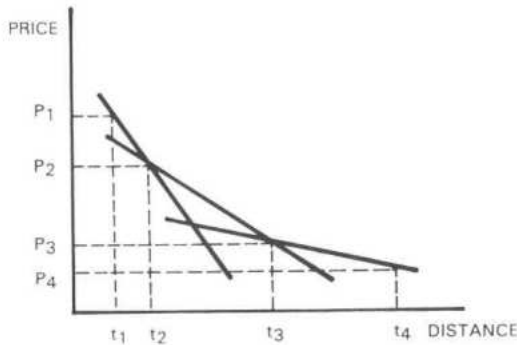


Figure 13: Households' Bid-Rent Functions

Based on Alonso's assumption of a household utility function consisting of housing/land consumption, location ( $t$ ), and the consumption of composite good ( $z$ ), and knowing that land price ( $p_i$ ) declines with distance, ( $t$ ), from CBD and transport cost ( $k$ ) increases as a function of the distance ( $t$ ) from CBD, the household should seek to minimize its expenditure on land cost and distance ( $t$ ) from CBD (Figure 14).

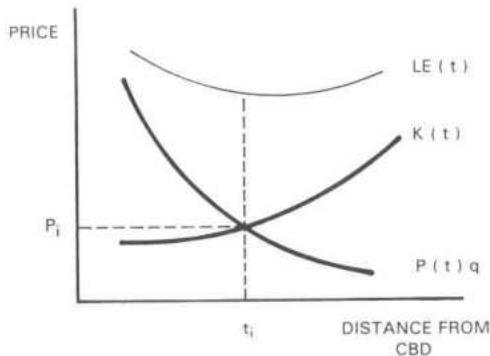


Figure 14: A Household Optimal Location



According to Alonso's model, for each level of land consumption ( $q$ ), a locational expenditure curve will be obtained, leading to a different optimal location ( $t$ ), (Figure 15). Hence, for each quantity of housing ( $q$ ) consumed, a different distance that minimizes locational expenditure and the amount of ( $z$ ) consumed will be achieved. With certain budget constraints and savings equal to zero, various quantities of land lead to various values of composite goods consumed. And hence, for

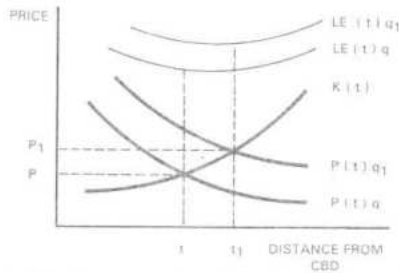
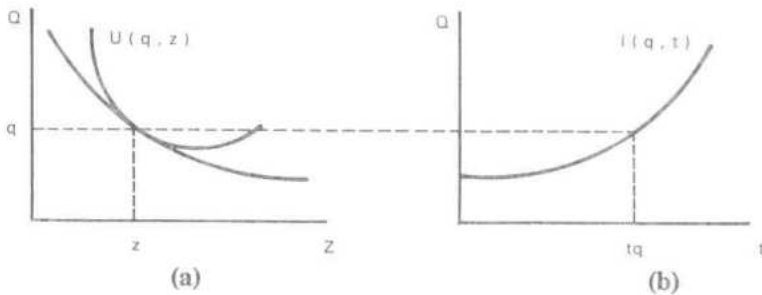


Figure 15: Household Consumption Level and Location

each household the consumption possibility frontier of ( $q$ ) and ( $z$ ) could be drawn, (Figure 16a) on the basis of which the optimal combination of ( $z$ ) and ( $q$ ) could be specified by the point in which the indifference curve between ( $z$ ) and ( $q$ ) is tangent to the consumption possibility frontier. Similarly, the optimal location of the household with a certain level of land consumption can be obtained by using the indifference curve between land consumption and distance from the CBD (Figure 16b).



Figures 16a and 16b: The Consumption Level of Housing Services, Goods, and Distance from the CBD

The above household equilibrium condition indicates that as household income increases, the consumption possibility frontier shifts up to the right, and the quantity of land consumed and the distance to the CBD increases. Alonso's model thus explains the phenomenon within American cities in which upper-income house-

## ***Residential Location Model***

holds tend to live in the outer suburbs away from the CBD.

The monocentric model of urban structure thus indicates that the increase of transport cost with distance from the CBD is associated with the decline of land prices with distance from the CBD. This decline in land prices per unit with distance from the CBD leads to higher land consumption by individual households (a direct application of consumer theory) resulting in a relatively lower residential density as distance increases from the CBD. Similarly, the rising land values as the CBD is approached induce developers to substitute land by a more intensive use of capital, which leads to a higher residential density as the CBD is approached.

Regarding the location of income groups within the city, the model suggests that as consumers move farther from the inner city, greater commuting cost must be counterbalanced by reduced expenditure on land. Upper-income consumers reduce their offered land price by spreading such cost increases over more land. Consequently, they are willing to bid more for peripheral sites than the lower-income consumers, at least relative to their offers for central locations. Since land goes to the highest bidder, an equilibrium location pattern requires that income increase with greater distance from the CBD.

Based on the above arguments, the monocentric models of urban structure predict a decline of both land prices and residential density with distance from the CBD. On the other hand, the model predicts an increase of household income with distance from the CBD.

### **The Impact Of Subsidies On The Housing Market, Residential Location, Building Typology And Urban Structure**

The magnitude of housing investment is probably one of the most influential factors determining urban growth patterns and rates. The effect of housing on the outward expansion and suburbanization of American cities investment is clearly evidenced in the 1920s and during and after the 2nd world war (Peterson, 1980). The magnitude of the impact of housing investments on urban areas makes governmental subsidies and restrictions on housing construction of great importance in the study of urban structure and residential location.

The impact of housing-construction subsidies on the aggregate demand and supply of housing is shown in Figure 17 where the demand curve shifts outward from  $D_1$  to  $D_2$ . The extent of housing demanded and the changes in the equilibrium price are determined by the elasticity of demand and supply curves to changes in housing prices (Figure 17).

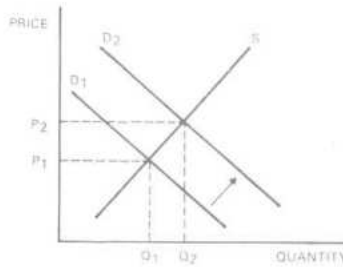


Figure 17: Subsidy's Impact on Housing Demand

While explaining the impact of housing construction subsidies on the housing market, the above model does not indicate the impact of subsidies on housing location. The impact on housing location is thus explored in light of the monocentric model of urban structure. According to this model, the increase in housing demand induced by the housing construction subsidy also increases the housing/land consumption level. The new level of land consumption ( $q$ ) leads to an upward shift in the locational expenditure curve, which in turn leads to a new optimal location ( $t_1$ ) that is farther away from the CBD (Figure 18). The increase of housing consumption induced by housing construction subsidies would lead the beneficiaries of the subsidy to locate farther away from the central city toward lower density suburban areas (Figure 18).

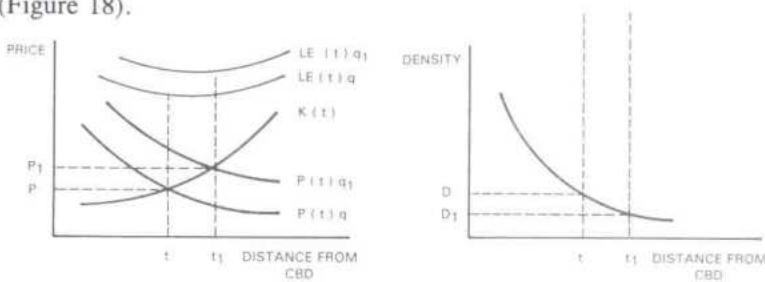


Figure 18: Subsidy's Impact on Housing Consumption Level, Household Optimal Location, and Residential Density

Using the Urban Institute Housing Model, Frank De-Leeuw and Raymond Struyck (1977) have attempted to simulate the impact of different types of housing subsidies on the housing market. From the simulation, the introduction of housing construction subsidies is found to lead to an upward shift in the demand for relatively good quality housing (the tax to finance the subsidy if any, will moderate but not eliminate this shift). On the other hand, housing construction subsidies would lead to a decline in the demand for low quality houses and a subsequent decline in

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their prices. This decline in the price of low quality housing will thus increase their withdrawal from the market and their abandonment if their demolition cost is higher than the prospective profit from rebuilding them.

In the case of inner cities that have a higher percentage of old and low quality buildings, a housing construction subsidy would, thus, accelerate abandonment of old low quality houses and the movement of households toward higher quality suburban houses. The movement to the suburb induces larger per household land consumption. The increased demand for single-family houses thus encourages developers who are searching for large parcels to build large numbers of single family houses closer to the urban fringe. The leapfrogging of single family housing developments beyond old urban boundaries leads to a further decline in residential density in the outer suburbs and extensive urban sprawl.

### **The Applicability Of Western Models Of Urban Structure To Cities In Developing Countries**

The literature on urban structure contains numerous studies investigating the relevance of the ecological models of urban structure to cities in developing countries and majority of them have concluded the inappropriateness of these western models for cities in the developing world. Studies on Asian cities and sub-Sahara Africa for instance, have indicated different patterns from the ones prescribed by Burgess' (Gist, 1955) and Hoyt (Timms, 1971). As a result of the lack of relevance of the ecological models to many cities in developing countries, various sociologists have felt the need for a general theory that would anticipate differences in urban form in relation to differences in culture, social structure, and the level of technology, and that would develop a wider frame of reference by suggesting not one ideal type of urban structure but a sequence of ideal types. Among these scholars is Gideon Sjoberg (1960), who constructed a model for the preindustrial city. In his book; *The Pre-industrial City*, Sjoberg argued that traditional cities, whether in medieval Europe, traditional China, India or elsewhere, do follow a pattern that is different from industrial cities. More elaboration on Sjoberg's model will be made in the following section, where the city of Riyadh is studied in terms of its relevance to the pre-industrial city model.

This paper argues that the lack of relevance of western models of urban structure and residential location to East African cities resides in the difference between modern versus traditional (pre-industrial) cities described by Gideon Sjoberg. The empirical studies on Latin American cities (Ingram & Carroll, 1981, Mohan & Villamizar, 1982, Pineda, 1981) and others (Mills & Tan, 1978) do seem to indicate that as cities evolve from traditional to modern industrial settings, western



models of urban structure become more relevant to them, despite of cultural differences.

On the basis of the above argument, the first research hypothesis on Riyadh's urban spatial structure was established. This hypothesis and others are established on the basis of above review of literature are explored below.

### **Research Hypotheses**

1. The virtual absence of any major political or cultural restrictions on the location and mobility of Saudi households within Saudi Arabia in general and Riyadh in particular, and the prominence of market forces in shaping urban development and economic growth have together transformed the city of Riyadh during the last two decades from a traditional city to a modern metropolis, in which household location is significantly explained by the household's economic level and resources, and in which intra-urban geographic mobility closely follows household economic mobility.
2. To the extent that the first hypothesis applies, the monocentric model of urban structure, in spite of its restrictive assumptions, does broadly explain the behavior of major variables of urban structure (i.e., residential density, land price distribution within the city), and the location of socio-economic groups within the city.
3. The degree to which the above elements of urban structure and the locations of various socio-economic groups within the city conform or deviate from the monocentric model's theoretical findings is associated with the applicability of the model's restrictive assumptions to the city of Riyadh, and hence, is explainable within the framework of the model.
4. The rapid urban growth and extensive decentralization of residential and economic activities in Riyadh has led to the decline in the role of CBD as the only centre of economic activity, flatter residential density gradients, and the emergence of new suburban commercial centres with relatively higher land prices and residential density in comparison to other areas at the same distance from the CBD. These phenomena however, do not totally disrupt the declining land prices and residential density gradient predicted by the monocentric model, due to the persistent importance of access to the Inner City and its vicinity.
5. The Saudi government's policy of providing households long-term interest-free

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home building loans and land grants have significantly increased housing consumption level for middle and lower income households in a manner disproportionate to their income level, and hence allowed them to join upper income households in lower density suburban areas, where larger and higher quality single-family housing units can be built.

6. The REDF loan eligibility condition requiring that household possess a piece of land in order to qualify for the loan has led households with middle- and lower- income who do not own land to seek the cheapest available land lots in the city periphery. This combined with land grants (usually located in remote areas) have consequently led to extensive leapfrogging and lower density pattern of development in outer suburb and outlying areas.
7. Upper-income households location within Riyadh were not affected by the REDF loan eligibility conditions, and hence are predominantly located within inner Suburbs, which in turn has reduced their commuting time compared to middle- and lower- income loan beneficiaries located in the city periphery.
8. The location of the upper-income households in the inner suburbs has attracted higher quality public and private services leading to the recognition of inner suburbs as prestigious areas in the city. These factors together have attracted further residential development and relatively higher land prices within inner suburbs.
9. Due to the fact that major Saudi cities have undergone similar socio economic and political influences during the last tow decades, a period during which most of urban growth has taken place, the above hypotheses do apply to those Saudi cities that are of a size comparable to the city of Riyadh.

The above hypotheses are systematically verified in the following sections.

### **Riyadh In Light Of The Pre-Industrial City Model**

In order to verify the first research hypotheses related to the transformation of the city of Riyadh from a pre-industrial city to a modern (Industrial) metropolis, the urban and socio-economic characteristics of the contemporary city of Riyadh were compared to their counter part in Gideon Sjoberg's pre-industrial city model (Telmesani, 1989). The comparison clearly indicated that the current absence of political or cultural restriction on locations and mobility of Saudi households within and between cities, and the prominence of market forces in shaping urban devel-

opment and rapid economic growth have resulted a radical difference between the urban and socio-economic characteristics of the contemporary city of Riyadh and those described by Sjoberg in his pre-industrial city model.

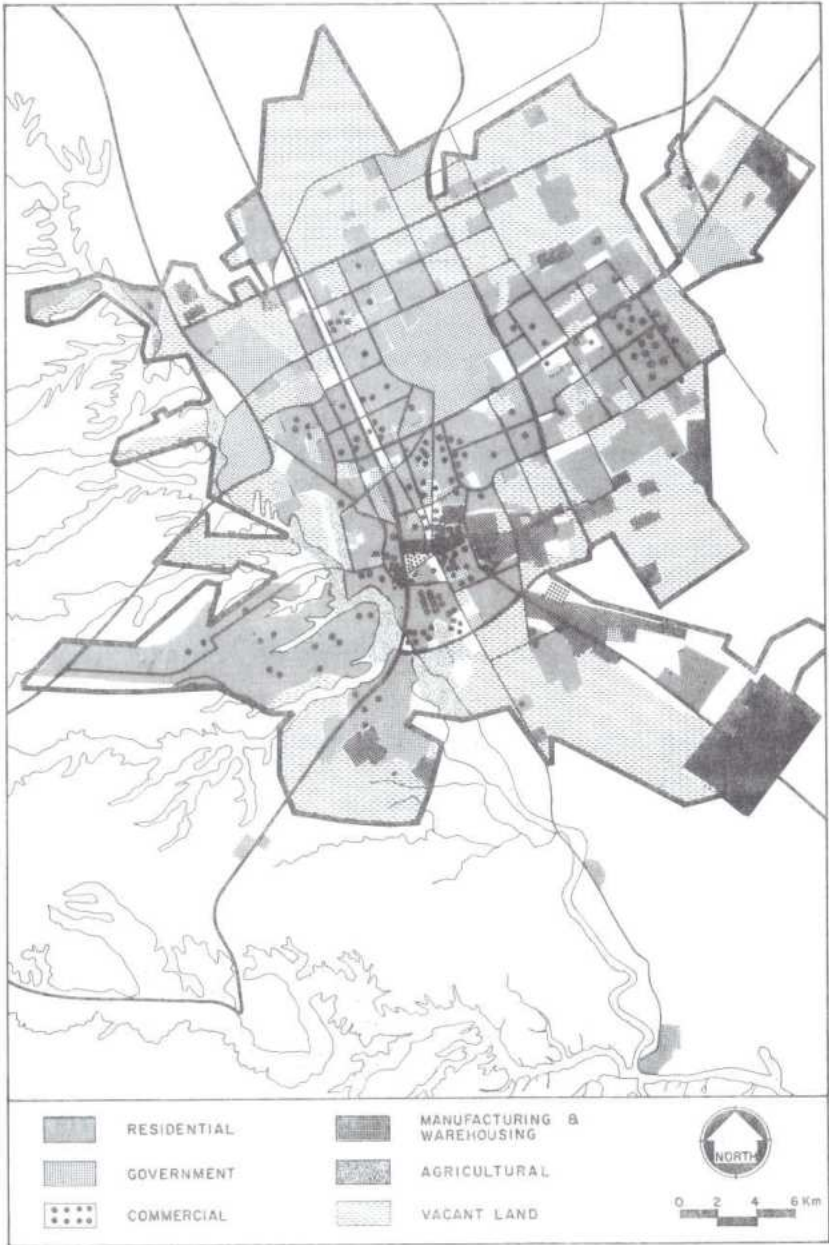
The characteristics that differentiate the city of Riyadh from the pre-industrial city model can be briefly stated as follows:

1. The population of the city of Riyadh has already reached the mark of 2.78 million person in 1992 compared to the population of the preindustrial cities which is fewer than 100,000.
2. The rapid growth in the city during the last three decade have been predominantly related to economic growth.
3. The complexity of modern Riyadh's economic sectors and its elaborate division of labor compared to pre-industrial city.
4. The emergence of the middle-income group as the largest income group within the city (Table 28).
5. The central city of Riyadh is no longer the hub of the city, or the location of upper income group.
6. The contemporary city of Riyadh has a relatively high level of separation among various uses (Figure 19) compared to pre-industrial cities where lower levels of specialization of functions is exhibited.
7. The extensive intra-urban mobility of the residents of the city of Riyadh during the last two decades indicate social mobility among various income groups compared to those of the pre-industrial city.

#### **Land Prices, Residential Density, And Household Income Level As Functions Of Distance From Riyadh's CBD**

In investigating the second, third and fourth hypothesis this section will study the behavior of each of the three variables; residential density; land prices; and, household income level, in terms of their variation with distance from the CBD, using data from the Arriyadh Development Authority's household and real estate agents surveys<sup>[2]</sup>. The analysis will be undertaken for each of four major directions: north-west; north-east; south-east; and south-west (Figure 20), and across

*Residential Location Model*



*Figure 19: Land Uses*



thirteen city zones (Telmesani, 1989) that are categorized into: CBD, Inner Suburbs, Outer Suburbs, and Outlying Areas. The categories are applied to each of the major directions wherever applied (Figure 21).



Figure 20: The Four Directions

## Residential Location Model

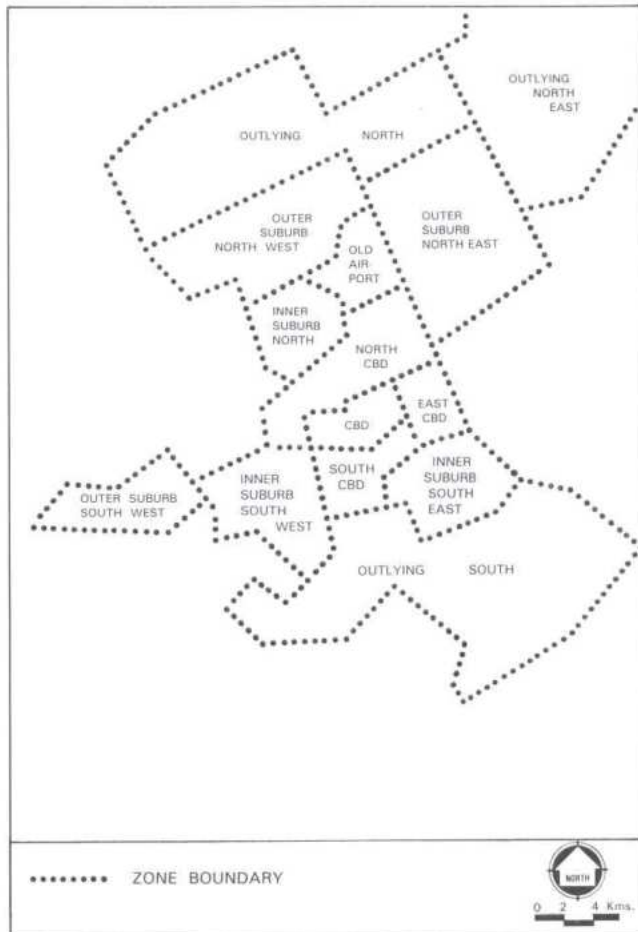


Figure 21: City Zone

### Land Prices

Using data on land values obtained from a survey of real estate agents carried out by the Arriyadh Development Authority, average land prices within *sub-haras* were regressed on the *sub-haras*' distance from the CBD in all directions simultaneously as well as in specific directions individually using negative exponential functions. The regressions results are shown in Table 26. Unlike the regression results of land prices with distance from the CBD in specific directions, the regression of *sub-haras*' land prices with distance from the CBD in all directions shows a relatively low R-squared (0.277), which indicates a relatively smaller portion of the

variation in *sub-haras'* land prices being explained by distance from the CBD. This is due to the distinctive character of rent gradients in each of the four directions from the CBD. The variation of the shape of rent gradients is indicated in Figures 22 and 23 showing the land rent gradient using *sub-haras'* land prices in all directions and each of the four directions.

Table 26  
Rent Gradients by Direction

Direction	Rent Gradient (t-stat)	R-Squared	F-Ratio	Segn. Level
All Directions	-0.07 (-6.6)	0.027	44.8	.00000
North-West	-0.11 (-6.3)	0.62	40.7	.00000
North-East	-0.10 (-7.8)	0.69	62.3	.00000
South-East	-0.13 (-3.8)	0.46	14.5	.00000
South-West	-0.15 (-5.9)	0.64	35.9	.00000

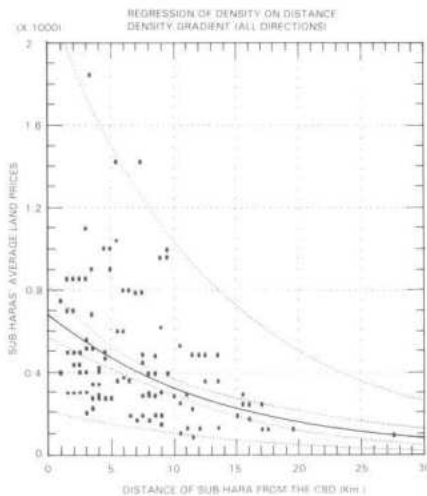


Figure 22: Rent Gradient: All Directions Simultaneously

## Residential Location Model

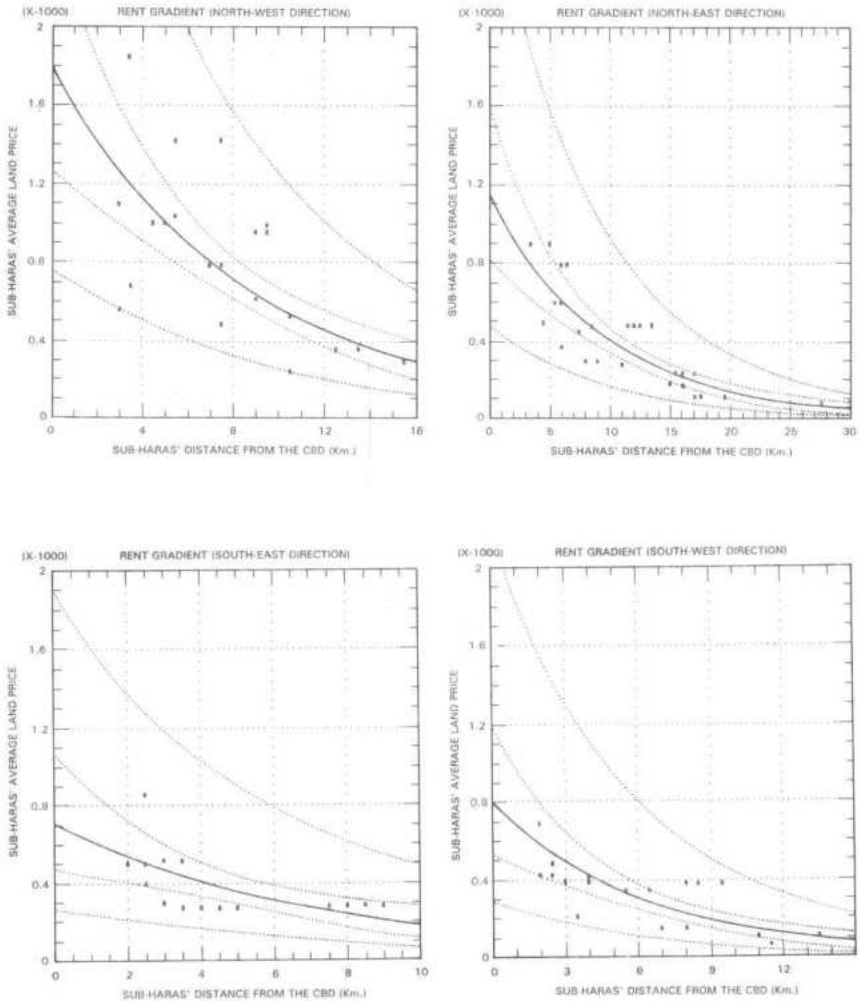


Figure 23: Rent Gradient: Four Directions

The analysis of land prices in the north-west direction indicates the tendency of land prices to peak in the Olaya / Sulaimaniyah areas, 5-8 kilometers from the CBD, and decline thereafter. A similar rise in land prices (though smaller in magnitude) is also detected in the north-east direction (in Al-Malaz area, five kilometers from the CBD), and Al-Naseem areas in Al-Rawdah sub-municipality, 10-14 kilometers from the CBD.



The increase in land prices within Al-Malaz, Olaya, Sulaimaniyah, and Al-Naseem areas is clearly related to the commercial activities in these areas. This distinctive rise in land prices in areas with high commercial activities confirms the findings of the Arriyadh Development Authority which indicate that the price of land around commercial areas which has the potential for commercial development increases two to three times more than the prices of other land areas at the same distance from the CBD. The width of the street, and the availability and quality of public utilities and services are other important factors also influencing the variation in land prices.

Regarding the change of the shape of the land rent gradient over time in Riyadh, the ADA report indicates a decline in the average land price in the CBD from SR 2500 to SR900 between 1968 and 1986. On the other hand, land prices in suburban areas shifted upward from SR 50 to SR 600 in Al-Malaz, and from SR 20 to SR 300 in Al-Mather between 1968 and 1986. Figure 24 shows the impact of the above changes in land prices on the shape of the land-rent gradient between 1968 and 1986.

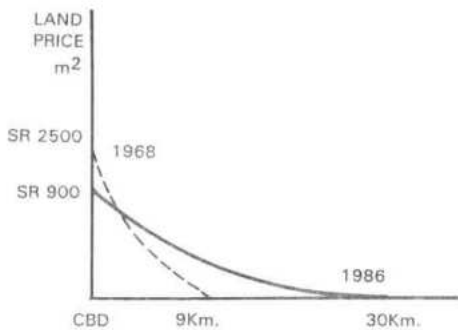


Figure 24: Rent Gradient Shift with Time

The analysis of the *sub-haras*' average land price shows that land prices decline with distance from the CBD following a negative exponential function. However, factors other than the distance of the *sub-haras* from the CBD such as the emergence of suburban commercial centres, potential of the lots for commercial development and the width of the road are found to influence their land prices.

However, the analysis indicates that the distance from the CBD still accounts for more than 50 percent of the variation of land prices within Riyadh. This indicates: 1) the persistence of the importance of access to the inner city of Riyadh in

## *Residential Location Model*

affecting land prices, in spite of the extensive decentralization which has taken place in the city; and 2) the tendency of the land-rent gradient in Riyadh to get flatter over time.

### **Residential Density**

The ADA's studies on gross and net residential densities within Riyadh, indicate that gross residential development density averaged 3 dwelling units per hectare city-wide, which obviously is a very low level of residential development density in comparison to other cities in both developing as well as developed countries. This low residential density can be explained by the extensive leapfrogging within the city, which has resulted in a considerable amount of vacant land, particularly at the city periphery, and a severe case of urban sprawl.

On the basis of information obtained from the ADA report on the distribution of dwelling units and the average number of household members and vacancy rates within various *haras* (neighborhoods), the number of persons (both Saudis and non-Saudis) per square kilometer within various *sub-haras* was computed. By regressing *sub-haras*' gross residential density on their distances from the CBD in all directions as well as specific directions, it was found that residential density does decline with distance from the CBD following the negative exponential function (Table 27).

Table 27  
*Density Gradients: By Direction*

Direction	Rent Gradient (t-stat)	R-Squared	F-Ratio	Segn. Level
All Directions	-0.095 (-11.6)	0.63	135.2	.00000
North-West	-0.087 (-4.6)	0.50	21.6	.00000
North-East	-0.057 (-4.2)	0.43	17.6	.00000
South-East	-0.166 (-8.2)	0.78	67.4	.00000
South-West	-0.102 (-9.4)	0.86	89.2	.00000

Comparing the density gradient within the city of Riyadh with the results obtained by Mills and Tan (1978) in their comparative study of urban population density in cities in developing and developed countries, the overall density gradient

within the city of Riyadh (-0.095) is found to be lower than in cities in both developing countries (e.g., -0.19 in Latin American cities, -0.67 in Korea, and as high as -1.34 in Hubli, India) and developed countries (-0.199 in American cities in 1965, and -0.123 in 1970).

To demonstrate the effect of the low density residential development during the last decade within Riyadh's suburban areas on the density gradient, the density gradients within the areas 10 Km, and beyond 10 Km from the CBD were computed and compared to the overall density gradient.

In comparison to the city's overall density gradient obtained above (-0.095), the density gradient for areas within 10 Km from the CBD is found to be -0.17, which is similar to gradients in U.S. cities. On the other hand, the density gradient within the area beyond 10 Km from the CBD is found to be -0.05, which clearly indicates the low density development within the outer-suburb and outlying areas of the city.

The sharp decline of residential density beyond the Inner City, and the distinctively flatter residential density within the suburb (Figures 25 and 26) show consistent pattern with the density gradients obtained from regression analysis done at the *sub-haras* level. As far as the variation in the behavior of density gradient with respect to distance and direction from the CBD, the analysis indicate a similar pattern as that of the rent gradient curve.

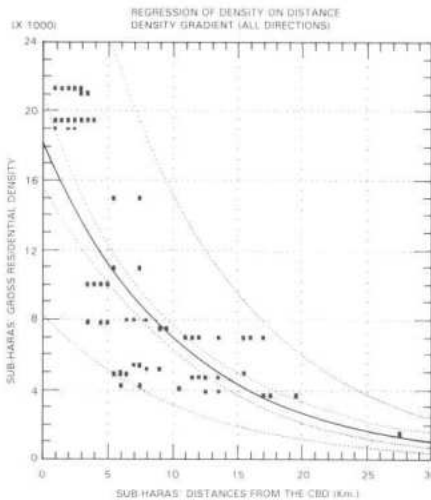


Figure 25: Density Gradient: All Directions Simultaneously

## Residential Location Model

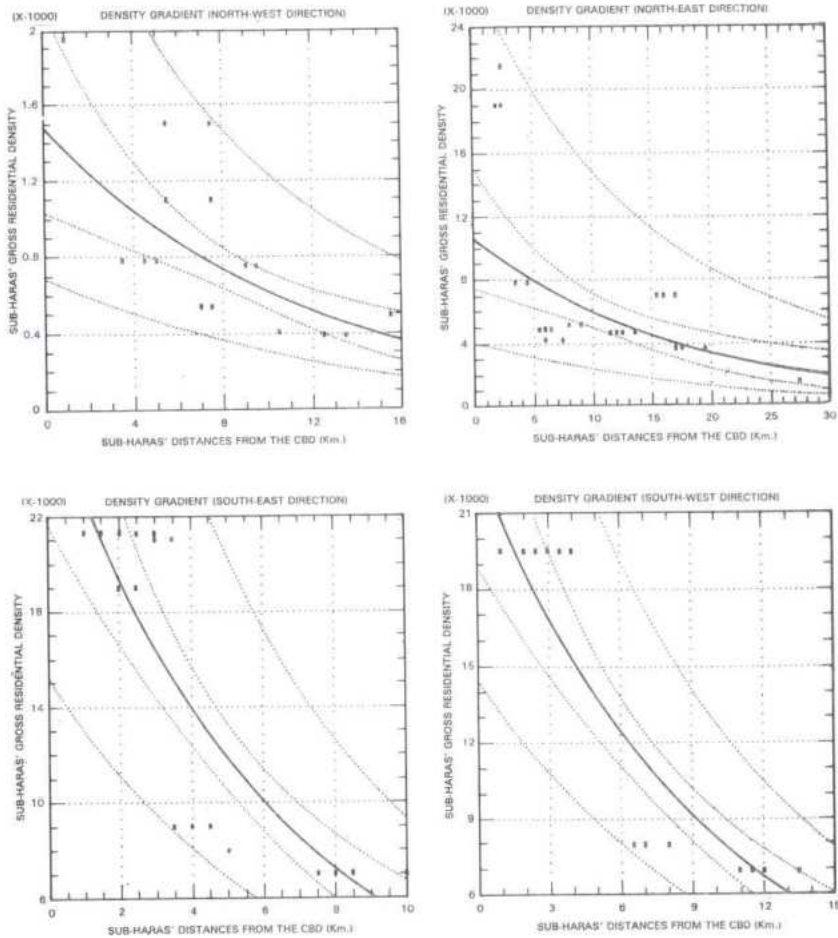


Figure 26: Density Gradient: Four Directions

To investigate the change of the residential density gradient's shape over time, a comparison was made of the residential density level within the central city in 1977 and 1986/87 based on the ADA and SCET surveys<sup>[3]</sup>. The comparison indicates the decline of residential density within the central city in absolute terms within this period of ten years. This phenomenon is also supported by a 53 percent vacancy rate in old buildings within the central city. The suburbanization process which has taken place during the last decade has pushed residential density upward in peripheral areas which were not previously inhabited. Figure 27 shows the way the residential density gradient in Riyadh has shifted over a ten year period.



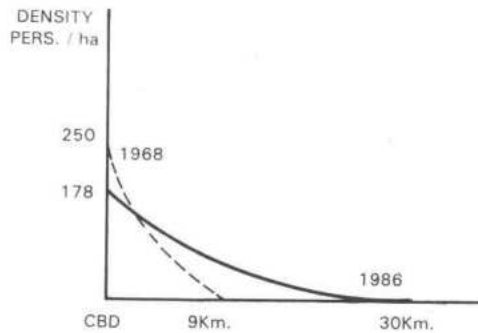


Figure 27: The Shift of Density Gradient with Time

The tendency of residential density gradients to become flatter over time is common to cities in both developing as well as developed countries (Mills and Tan, 1978). However, the decline of residential density within Riyadh's central city in absolute terms is explained by the significant increase of per capita income combined with extensive housing subsidies and land grants, which increased a household's ability to afford movement to suburban areas. This process was further stimulated by the availability of efficient toll-free highways that reduced commuting time.

### Household Income

In exploring the relationship between household income and distance from the CBD, household annual income was regressed on their distance from the CBD in all directions. The analysis indicates a lack of a significant relationship between the two variables ( $R\text{-squared} = 0.015$ ). The insignificant relationship between household annual income and distance from the CBD is found to result from the complexity of the distribution of various income groups within the city, and the strong zonal and directional influence on their distribution. In order to account for these factors, both analysis of variance and cross-tabulation methods were employed, using the zonal subdivisions as the unit of analysis.

By first analyzing household income level in terms of its variation across city zones, it is found that household income level does significantly vary among zones ( $F\text{-ratio} = 8.0$ , at 0.05 significance level). Furthermore, the distribution of households by income level over city zone (Table 28) shows that middle-income households comprise between 50 - 80% of households within each of the zones. On the other hand, the percentage of both upper-income and lower-income groups varies widely among different zones. This is particularly evident between the CBD and

## Residential Location Model

the northern and southern zones. For instance, in the CBD, the percentage of lower-income households is as high as 41%, which is the highest among all zones. This relatively high percentage of lower-income households consistently declines as the distance increases from the CBD toward the north, reaching its lowest percentage in Inner Suburb North. On the other hand, the percentage of upper-middle as well as high-income households consistently increases toward the north, peaking in Inner Suburb North, and flattening, then declining toward outlying north and north-eastern zones.

This phenomenon of a declining percentage of lower-income households and an increasing percentage of middle, upper and high-income groups between the CBD and Inner Suburb North, and its reverse between the Outer Suburbs and the Northern outlying areas is almost replicated in the southern part of the city. However, in the southern sector, we find a lower percentage of upper-middle and high-income groups and a higher percentage of both lower and middle income groups.

The above pattern of variation of household income level among city zones is displayed in Figure 28, showing the 95% confidence interval of average household income level by zones. The Figure indicates a mean household annual income level of SR 60,000- 70,000 (indicated by the dotted horizontal lines) is shared by zones such as the CBD and outlying areas in both northern and southern parts of the city. This line of middle household income level is the same one indicated by Table 29, in which middle income households are spread between the CBD and outlying areas.

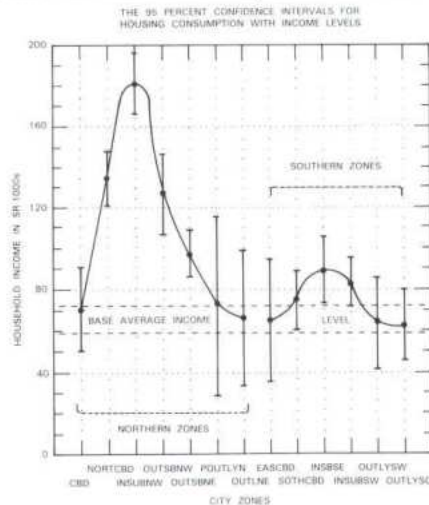


Figure 28: Average Household Income Across City Zones

Table 28  
The Distribution of Income Groups Among City Zones

City Zone Income Level	CBD	Month of CBD	Inner Sub- North	Outer Sub- N.West	Outer Sub- N.East	Outlying North	Outlying North- East	East of CBD	South of CBD	Inner Sub- S.East	Inner Sub- S.West	Outer Sub- S.West	Outlying South	Row Total
Lower Income	40.5	8.4	3.8	4.3	10.7	12.5	15.4	16.1	28.6	23.3	8.9	22.9	15.0	15.3
Middle Income	49.1	60.7	51.2	53.8	67.4	62.5	69.2	74.2	57.8	55.8	73.4	71.4	82.0	62.4
Upper-Mid Income	2.6	18.7	21.9	25.8	15.7	25.0	11.5	3.2	8.0	15.0	12.2	5.7	1.0	13.3
High Income	7.8	12.1	23.1	16.1	6.1	.0	3.8	6.5	5.5	5.8	5.5	.0	2.0	8.5
Column Total	7.1	13.1	9.8	5.7	16.0	.5	1.6	1.9	12.2	7.3	14.5	4.3	4.1	100.0

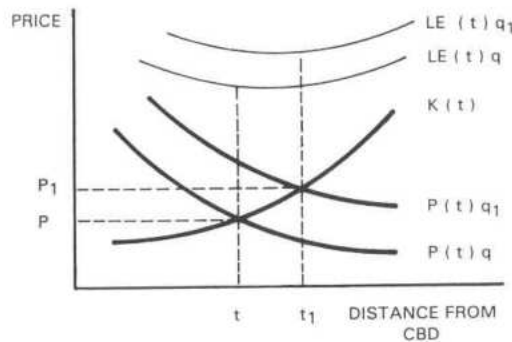
\* Low-income (less than SR 40,000); Middle-income (SR 50,000-120,000); Upper-Middle (SR 130,000- SR 240,000); High-Income (SR 300,000 and above)

## *Residential Location Model*

Figure 28 also shows the pattern of increasing average household income as the household moves away from the CBD toward the Inner Suburb in both the northern and southern zones of the city. It also shows the generally lower mean household income within southern inner suburbs in comparison to their counterpart in the north.

## **Toward A Theory Of Residential Location Within The City Of Riyadh**

Based on the findings of the earlier analysis on Riyadh's urban growth pattern during the last two decades, this section will attempt to explore the forces behind the location of various socio-economic groups within the city, and the factors influencing the urban growth pattern of the city as a whole. According to Alonso (1964) model, the rise of a household's housing consumption as a response to increases in income level leads these households to locate farther away from the Inner City toward suburban areas, where larger land lots can be obtained. This procedure is diagrammatically explored in Figure 29.



*Figure 29: Housing Consumption Level and Household Location*

Riyadh's rapid economic growth during the last decade has led to a major increase in demand on housing, resulting in a tremendous growth in housing development. This rapid growth of residential development has been enhanced by the government policy of providing households, regardless of their income level, with long-term interest-free housing loans through the Real Estate Development Fund.

Using analysis of variance to examine housing consumption level in terms of its



variation with different income groups, it is found that housing consumption level does not vary significantly with income level for households with income below SR 60,000 (F-ratio = 1.37, at .05 significance level). Figure 30 indicates no systematic variation of housing consumption and income levels. On the other hand, by conducting the same analysis using the sample of households with incomes above SR 60,000, housing consumption is found to vary positively with household income level at 0.05 significance level (F-Ratio = 23.6) (Figure 31).

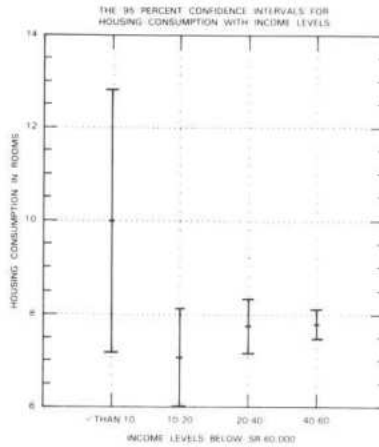


Figure 30: *Housing Consumption and Income Level for Households with Income Below SR 60,000*

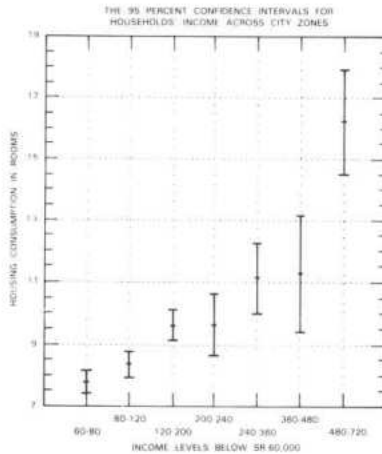


Figure 31: *Housing Consumption and Income Level for Households with Income Above SR 60,000*

### *Residential Location Model*

The lack of significant variation of housing consumption with income level for households with an income below SR 60,000 does seem to suggest that home building loans have shifted upward the ability of lower and lower-middle income groups to consume higher levels of housing services in a manner disproportionate to their level of income, which in turn has distorted the relationship between income level and housing consumption for these households.

In fact the REDF did not only allow its beneficiaries to consume housing services in a manner disproportionate to their income, but actually made it obligatory for its beneficiaries to do so, by establishing a condition of minimum built up area of 345 m<sup>2</sup>.

To further investigate the impact of REDF loan on housing consumption level in relation to their income level, a multiple regression model is fitted using housing consumption level (represented by the number of rooms per housing unit) for households with an annual income below SR 60,000 as the dependent variable. The independent variables include: household annual income in thousands of Saudi Riyals, cost per room in Saudi Riyals, a dummy variable for the households' use of the REDF loan, family size, and another dummy variable representing households living in the old city. The model output is shown in Table 29, which confirms the findings of the analysis of variance conducted above, indicating the lack of relationship between housing consumption and household income level.

On the other hand, the regression result shows that independent variables representing family size, households located in the old city, and households using the REDF loan have significant t-values. These results indicate: 1) the increase of housing consumption as family size increases; 2) the relatively lower level of housing consumption for households living in the old city in comparison to the ones living in the new suburbs; and finally 3) the relatively higher housing consumption for households who used REDF loan in comparison to others who did not. This does seem to indicate the impact of the minimum built up area imposed by the REDF.

By fitting the same model with the sample of households with an annual income above SR 60,000, different results on the relationship between housing consumption and income are obtained. The regression outputs are shown in Table 30, which indicates that housing consumption varies positively with household income level (unlike the case of lower-income households), with a significant t-value.

The analysis of housing consumption and its relationship with household income and the use of the REDF loan (using both samples of households with an

Table 29  
 Model Fitting Results For: Housing Consumption Households with  
 Income Less Than SR 60,000

Independent Variable	Coefficient	Std. Error	T.Value	Sig. Level
Constant	5.381262	0.82523	6.5209	0.0000
Household Income	0.012784	0.010272	1.2446	0.21381
Cost per Room	0.041388	0.063513	0.6517	0.5149
REDF Loan (D.V.)	0.496381	0.286527	1.7324	0.0837
Family Size	0.324898	0.034336	9.4623	0.0000
Old City (D.V.)	-1.741084	0.382782	-4.5485	0.0000

*R.SQ. (ADJ.) = 0.1841 SE = 2.890839 MAE = 2.332606*  
*F-Ratio = 1.769 F = 27.16 P. Value = 0.000*  
*581 observations fitted, forecast(s) computed for*  
*0 missing value of dep. var.*

annual income above and below SR 60,000) demonstrates that the REDF loan has increased the ability of lower and lower-middle income groups to consume higher levels of housing services disproportionate to their actual income level. The REDF loan has, thus, have increased the housing consumption propensity of households irrespective of the level of household income.

It must be indicated here that the use of the number of rooms/household as the only indicator for housing consumption level does not allow for indicating another source of distortion of the relationship between household income and housing consumption level. This source of distortion is related to land lot size per household, which is influenced by the land grants with minimum standard size of 400 m<sup>2</sup>. The standard size of land lots distorts the relationship between land lot size (as another indication of housing services consumption) and income level. Further research using data on land lot size / household could further indicate this relation.

Regarding the location of households of different income groups within the suburbs, the Sixth research hypothesis asserts that the REDF loan eligibility condi-

## Residential Location Model

Table 30  
Model Fitting Results For: Housing Consumption  
By Households With Income of SR 60,000 and Above

Independent Variable	Coefficient	Std. Error	T. Value	Sig. Level
Constant	5.524367	0.605392	9.1253	0.0000
Household Income	0.009029	0.001214	7.4356	0.0000
Cost per Room	-0.017477	0.040342	-0.4332	0.6650
Family Size	0.394825	0.032227	12.2513	0.0000
REDF Loan	-0.736504	0.257025	-2.8655	0.0043

$R.SQ. (ADJ.) = 0.2222$   $SE = 3.113173$   $MAE = 2.392653$

$F\text{-Ratio} = 61.421$   $P\text{-Value} = 0.0000$

847 observations fitted, forecast(s) computed for  
0 missing value of dep. var.

tion requiring that household possess a piece of land in order to qualify for the loan has led households with middle and lower-income who do not own land to seek the cheapest available land lots, or freely granted land, in the city periphery, which has consequently led to extensive leapfrogging and lower residential density pattern of development in outer suburb and outlying areas.

Evidence on the tendency of REDF loan beneficiaries to locate in the city periphery was clearly indicated by the study conducted on the relationship between housing unit source of finance and location within the city. The study (Telmesani 1989) indicated that lower and middle-income households have moved to outlying areas in order to take the full advantage of the Real Estate Development Fund.

Regarding the impact of the REDF loans on residential density, a multiple regression analysis was conducted using *sub-haras'* gross residential density as dependent variable and the *sub-hara's* distance from the city centre in kilometers, the percent of households using the REDF, and a dummy variable representing the old city as independent variables. The results (Table 31) indicate a significant regression model, with an overall F-ratio of 22.9. The model indicates the significant decline of *sub-haras'* gross residential densities with the distance from the



CBD. This result clearly reflects the magnitude of vacant developed land within the outer suburb of the city. It also indicates that the higher the percentage of households using the REDF loan, the lower the residential density. This clearly confirms the association between the REDF loan, and the declining level of residential density suggested by the Fifth hypothesis.

*Table 31*  
*Model Fitting Results For: Sub-hara Gross Residential Density*

Independent Variable	Coefficient	Std. Error	T.Value	Sig. Level
Constant	31.745668	3.171077	10.0110	0.0000
Distance from CBD	-0.565248	0.276853	-2.0417	0.0442
% of Households with Loan	-5.563248	2.4287	-2.2909	0.0244
Old City (D.V.)	9.005408	2.16784	4.1541	0.0001

*R.SQ. (ADJ.) = 0.4229 SE = 7.477140 MAE = 5.740794*  
*DurbWat = 0.943 F-Ratio = 22.98 P-Value = 0.0000*  
*91 observations fitted, forecast(s) computed for*  
*0 missing value of dep. var.*

By examining the relationship between the household head's trip to work time and household income level, the use of the REDF loan, the household's distance from the CBD in kilometers (Table 32) indicates that as the household's income increases, the commuting time significantly decreases. The analysis also indicates the increase of household commuting time for households using the REDF loan, since many of these households are located in outer suburbs. Finally, the model indicates the longer trip to work for households living in the southern portion of the city in comparison to households living in the northern portion of the city. This phenomenon results from the higher concentration of governmental and private institutions to the north of the CBD in comparison to the south, and due to the concentration of lower and middle income families in the southern suburb, most of which are beneficiaries from land grants and the REDF loans.

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*Table 32*  
*Model Fitting Results For: Trip to Work Duration*

Independent Variable	Coefficient	Std. Error	T.Value	Sig. Level
Constant	12.81785	1.173209	10.9255	0.0000
Household Income	-0.007017	0.003872	-1.8120	0.0706
REDF Loan (D.V.)	0.400004	0.700826	0.5708	0.5684
Old City (D.V.)	-4.224859	1.096789	-3.8520	0.0001
Southern Zone (D.V.)	3.355689	0.677132	4.9557	0.0000
Distance from CBD	0.254009	0.066618	3.8129	0.0002

*R.SQ. (ADJ.) = 0.1041 SE = 6.428944 MAE = 4.971841*  
*DurbWat = 1.973 F-Ratio = 12.62 P-Value = 0.0000*  
*501 observations fitted, forecast(s) computed for*  
*0 missing value of dep. var.*

According to the Eighth research hypothesis, the location of upper-income households in inner suburb has attracted higher quality public and private services leading to the recognition of the inner suburb as prestigious area. To further investigate the impact of the above factors on land price within *sub-haras*, a regression model is fitted using average land price within the *sub-hara* as the dependent variable and independent variables include: the distance of the *sub-hara* from the CBD in kilometers, average household annual income, a dummy variable representing prestigious areas (Olaya and Sulaimaniyah), another dummy variable representing southern *sub-haras*, and the percentage of households using REDF loans as the independent variables. Table 33 indicates the relative decline of land prices as one moves outward from the CBD. Land prices are also indicated to vary positively with the *sub-haras'* average household income. Similarly, land prices seem to significantly increase within prestigious areas. On the other hand the dummy variable representing southern *sub-haras* indicates the decline of land prices within southern *sub-haras* relative to northern ones. The model also indicates that land

prices seem to decline as the percentage of households receiving REDF loans increases, though at a relatively less significant t-value.

*Table 33*  
*Model Fitting Results For: Land Price Per Meter (00 Riyals)*

Independent Variable	Coefficient	Std. Error	T.Value	Sig. Level
Constant	6.547272	1.562559	3.9619	0.0001
Distance from CBD	-0.357041	0.052631	-6.7839	0.0000
Average Household Income	0.012063	0.002082	5.7955	0.0000
Prestige (D.V.)	2.434644	0.594063	4.0983	0.0001
Southern Zones (D.V.)	-1.713497	0.579531	-2.9567	0.0040
% of Households With REDF Loan	-1.052734	0.678212	-1.5522	0.1240

*R.SQ. (ADJ.) = 0.6715 SE = 1.878286 MAE = 1.356187*  
*DurbWat = 1.178 F-Ratio = 40.65 P-Value = 0.0000*  
*98 observations fitted, forecast(s) computed for*  
*0 missing value of dep. var.*

The above model thus indicates the relatively higher land values within prestigious areas in the inner suburban, which upsets the consistent decline of land prices as one moves away from the CBD as was indicated earlier.

The same phenomena is found to take place within inner suburb of Al-Hamra district in the city of Jeddah, where land prices seem to be higher than land lots that are closer to the CBD. This phenomena upsets the consistent decline of land prices as one moves way from the CBD.

## The Applicability Of The Findings To Other Saudi Cities

The major factors accountable for the urban growth pattern of the city of Riyadh explored in the research, such as the tremendous economic growth and

## ***Residential Location Model***

extensive housing subsidies are applicable to other major Saudi cities as well. However, being the capital of Saudi Arabia and the centre of administrative activities, Riyadh is distinguished from most Saudi cities by its larger scale and faster rate of urban growth. The difference in scale and rate of growth between Riyadh and other Saudi cities raises questions about the applicability of these findings to all Saudi cities.

However, major Saudi cities like the city of Jeddah, the former national administrative centre and the largest commercial centre on the west coast of Saudi Arabia, bears a close resemblance to the city of Riyadh in terms of its scale and rate of growth and thus making the findings of this research on Riyadh closely applicable to Jeddah.

The initial finding from a research currently being conducted by Abdullah S. Junaideb (1994) on the city of Jeddah does clearly indicate the applicability of most of the above research finding to the city of Jeddah. This very important and timely finding does prove the last hypothesis related to the applicability of the above analysis of urban structure and residential location to major Saudi cities. However, similar research conducted on other major Saudi cities could be instructive in providing further insights to generalize the research findings to other major Saudi cities that are relatively smaller in size.

## **Policy Implications**

Throughout the research, two major features of Riyadh's urban structure and pattern of urban growth were revealed: 1) the extensive low density, leapfrog growth patterns within the outer suburb and outlying areas, leading to a severe case of unnecessary urban sprawl; and 2) the decline of the role of Inner City in response to the movement of households and businesses toward the suburbs.

Regarding the leapfrog pattern of residential development in the outer suburbs and outlying areas, empirical evidence indicates that home building loans have increased the household consumption level of lower- and middle-income households more than in proportion to their actual income, and the loans' eligibility conditions combined with land grants usually located in remote areas have together encouraged lower-middle income households to locate in remote areas.

Understanding the way in which the REDF loans have encouraged urban sprawl by lower-middle income households makes the modification of the Real Estate Development Fund's eligibility conditions a high priority.



Furthermore, the research also indicates that the highly efficient toll-free highway system and the high rate of auto ownership have together led to low commuting costs. This relatively low commuting cost has in turn stimulated the leapfrogging of housing development to remote areas.

Now, while costing households less in terms of commuting time and expenditures, the leapfrogging phenomenon imposes a high cost to the city in the form of provision of services and maintenance of unnecessarily large areas. In other words, the cost to the household of locating in outlying areas does not reflect the cost to the city in terms of service and maintenance of these areas. This is one of the typical cases of market failure.

One of the policies commonly adopted to restrict the phenomenon of leapfrogging is to restrict development in the outer areas of the city. However, a more economically efficient, and less costly policy for adjusting for the discrepancy between the cost of leapfrogging to households and the social cost to the city in general is to place a spatially differential construction charge on newly built houses that reflects the cost imposed by the new development on the city. Hence, areas that are very remote or costly for the city to develop could be charged at a sufficiently higher rate than other areas. On the other hand, areas within the city where new development is desirable (such as the Inner City zone, which will be discussed below) would not be charged, or would even be subsidized by the revenues from construction charges on development in undesirable areas.

The proposed system of spatially differential construction charges, if properly designed, will thus deter development within undesirable areas, and provide an incentive for future development in areas where development is deemed desirable; at the same time it will provide a source of revenue to the city. The above fiscal instrument will be a self-adjusting tool for balancing the cost of future development to the city, and the revenues for financing on-going developments.

The potential effectiveness and feasibility of a spatially differential charge and similar fiscal urban growth regulating instruments are important and are timely subjects for future research.

The other phenomenon resulting from rapid suburbanization of housing development and businesses is the decline of the Inner City. To deal with the decline of the inner city, a major urban renewal project has been undertaken within the old city of Riyadh. The project included a major shopping centre and major civic buildings to revitalize the area. These buildings have been designed in a way sympathetic to the traditional architectural style that characterized the old city. Furthermore,

## ***Residential Location Model***

the city has worked with private businesses to encourage their location within the Inner City.

The evidently powerful influence of the Real Estate Development Fund in enhancing the suburbanization process and subsequent move of households from the Inner City seems to point to the possibility of utilizing the momentum of the Real Estate Development Fund to discourage further movement of households away from the inner city, or even to encourage some households to locate within the area.

The adjustment of the Real Estate Development Fund's eligibility conditions suggested above could include conditions that encourage the revitalization of existing buildings within the Inner City, or even the rebuilding of dilapidated structures within the area.

To encourage businesses to locate within the inner city, research needs to be conducted on the determinants of the location of firms and commercial activities within the city. Such research can be used as a basis for creating a more enlightened system of incentives.

### **Notes**

[1] The household utility function is thus:

$$U = U_0(t, q, z) \quad (1)$$

With transport cost ( $k$ ) (assumed to be constant with respect to income) increasing with distance from the CBD, and a fixed price ( $p_z$ ) for composite goods set at a unitary level for simplicity, and the price of land ( $p_l(t)$ ) declining with distance ( $t$ ) from the CBD, the household seeks to maximize its utility subject to budget constraints. This utility maximization implies optimizing the residential location choice.

Assuming that the expenditure of the household is equal to its income ( $Y$ ), it follows that:

$$Y = p_z \cdot Z + p_l(t)q + k(t) \quad (2)$$

[2] Kingdom of Saudi Arabia, High Commission for the Development of Riyadh,

High Executive Committee, Arriyadh Development Authority, Household survey results, and; Demographic, Transportation, Land Use, and Economic Studies reports, Riyadh, 1987.

- [3] SCET international, Existing Condition, Report #6, Riyadh, 1979, p. 13.





## **9 Regional Disparities In The Provision And Use Of Education And Health Services**

**Brian P Birch, Mohammad S Al Kahtani, and Mohammad S Al Ribdi**

One of the major objectives of national development planning in the Kingdom of Saudi Arabia has been to build a strong infrastructure of basic social services in order to develop the Kingdom's human resources, and to improve the quality of life (Ministry of Planning, 1976). To a large extent, this objective is well on its way to being achieved. The current Fifth Development Plan aims to build on this by diversifying the economy to achieve "balanced growth throughout all regions of the Kingdom" (Ministry of Planning, 1990). But spatial analysis of a variety of social services shows that some regions, notably those with major urban centres, still have better access to services, and have experienced far more growth in services, than those regions containing only the small towns, the rural and the remote desert areas. Some cities are better provided than others, and there are marked differences in provision between various rural areas.

This paper examines disparities in the provision and use of education and health services. Simple indices, like the proportion of children who go onto secondary schooling - still under half of children in the relevant age group - or the ratio of the numbers of physicians to the size of the population which they serve, provide clear illustrations of these disparities. Often, urban regions have more than twice the level of provision of other areas. These disparities have mainly resulted because it has been relatively easier to provide a full range of services to the urban population - now more than three-quarters of the Kingdom's population - than to the rural and nomad population. But urban growth has been so rapid - at 9 per cent a year, and mainly by migration from the rural and desert communities - that, since the Third Five-Year Development Plan, the provision of more services in the smaller, and more scattered, communities has been emphasized (Al-Ankary and El-Bushra, 1989). Not only can this help to reduce migration to the urban areas, but it ensures that inequalities in provision of services, which arose in the earlier plan periods, are reduced.

Several reasons, other than the growth of major urban centres, can be found to explain these earlier disparities. The speed with which the infrastructure of services has been created, notably after national income exploded in the 1970s, made it

## *Provision and Use of Social Services*

difficult to plan for an entirely equitable distribution of services across all areas. This was made particularly acute by a shortage of data, including regular national population censuses, with which to assess the needs of each region. Few surveys have been made of the extent of use of services provided in each area, to assess the adequacy of that provision. A lack of trained personnel, experienced in allocation, planning and providing the services, also limited the effectiveness of the provision, so that some areas gained more than others. With many of the health-care services, dependent on expatriate skills, for example, it was inevitable that these would expand faster in the cities, where those skills could best be assembled. The centralized governmental system also lacked, until recently, a strong regional planning input to ensure that the particular balance of social and physical infrastructural requirements of the regions were provided in a way that best met the particular needs of each region.

## **The Provision Of Public Services**

Public services, of which the social services form part, are generally those which individuals cannot provide for themselves and which the private sector is unable, or unwilling, to provide. For the most part, because they are seen as critical to the development of a modern society, their provision becomes the responsibility of a government (Lineberry, 1980). While several classifications of public services have been devised in recent years, attempts to create a general framework for their description and assessment have come to few satisfactory conclusions. Current developments in location-allocation modeling, however, may help in the future. Meanwhile, some classifications have focused on the extent of the provision of services, and how much the government is involved in their provision. Education and health services, fire and police protection, roads, and a clean water supply are usually among those included as essential public services which the government provides. Others, like housing, public transport, parks and public libraries would only be included as public services, provided by government, in some societies. Or, government might provide those services only in regions where there is a clear need for them. Within any society, the particular public/private mix for these services may also vary from region to region, as in health care where private hospitals and clinics may be available only in urban areas as an alternative to the state-run health system.

The involvement of the state in services considered important to the well-being of the population may extend to the greater regulation of provision, whether the services are provided by the public or private sectors. This seeks to ensure that the levels of provision, laid out in government policy aims, are achieved, and that the

services meet defined quality standards across the whole population, such as by licensing physicians, or by requiring that a school-place must be available to every child wherever he lives.

Some attempts at classifying and assessing public services have taken a more geographical, or spatial approach, like those distinguishing between 'point' and 'network' services (Teitz, 1968). Point services are those to which users have to travel to use them, as in the case of schools and hospitals. Here, excessive distance from the service point may render it inaccessible to many of the people it is intended to serve, or may reduce its level of use. The analysis of thresholds and catchments becomes an essential part of the assessment of point-based services. Network services are ones brought to the consumer, like electric power and roads. Assessing the effectiveness of each type of service provision requires the application of different criteria (Massam and Askew, 1984). For a point service assessment, measures could include calculating the mean and maximum distance that users have to travel to reach the nearest service outlet, in order to estimate the proportion of the population in the catchment which is effectively cut off from the service because it is too distant. In contrast, the effectiveness of a network service might be assessed by the cost, reliability and extent of the service. This can be measured in various ways, such as by calculating the percentage of households in an area with a piped water network who are connected to that supply, and the cost of extending the network to all households.

Such classification of services, as an aid to their assessment, may have limited value, however, particularly where a service can operate both at points and as a network. Thus, while a health clinic is an example of a 'point' service when patients go to see a doctor there, that doctor can also provide a 'network' service by going out to visit patients. Many network services, like street lighting and household waste collection, are often only available within urban areas. Therefore, they really operate only at a series of points, generally the towns, where health, safety or other factors warrant the extra cost of providing them. In general, the effectiveness of a point service is more difficult to assess than a network service because there is seldom sufficient data available on its catchment area, its rate of use, and the effects of distance on that use rate.

### **Educational And Medical Services As Point Services**

The provision of different types of schools and medical services can be looked upon as various forms of point services. At the one extreme are elementary schools and primary health-care centres. As basic services, essential to the well-being of the population, planners aim is to provide them at as many points as necessary to



## *Provision and Use of Social Services*

give the whole population ready access to them. As a result, each is a small unit catering for a very local catchment. At the other extreme are the higher levels of education, like colleges, and specialist medical services, such as special hospitals. These generally need to operate in larger units so that they have to command large catchments, and users expect to travel considerable distances to use them. They are, therefore, generally located at a few central points, often in larger towns. Those educational and health services which are rather less specialist and are used by more of the population, like secondary schools and general hospitals, have point patterns and sizes of catchments that fall between the two extremes.

In developing a school or health-care system, each with its particular range of facilities set up at numerous points, the aim is to cover the country with patterns of catchments which best meet the needs of the population and which make the best use of the facilities. In first looking at educational provision, it can be seen that vast progress has been achieved in Saudi Arabia in recent decades to make basic schooling accessible to the majority of children, no matter where they live. Expenditure on education by the Ministry of Education rose from 9 billion SR. in the first Five-Year Development Plan (1970-75) to 117 billion SR. in the fourth (1985-90), and also increased as a share of government spending (Ministry of Education, 1992). The outcome of this is clear in Figure 32, which shows on a logarithmic scale the increases in the numbers of schools during the period of the first four plans between 1970 and 1990. Over that time the number of boys' schools (including elementary, intermediate and secondary) increased more than 4-fold, with a similar large rise in enrollments. Girls' education, which has traditionally lagged behind, made even larger gains, with a 14-fold increase in the number of schools. Increases in enrollments were also impressive. The number of boys receiving schooling rose from 0.3 million in 1970 to 1.3 million by 1990. The total enrollment of girls at schools was much smaller than for boys in 1970, but the gap had been much reduced by 1990 when there were about a million girls at school. That is, about three-quarters of children in the primary school age group were getting an education by 1991 (World Bank, 1992).

## **Regional Disparities In School Provision**

Outside of the urban areas, however, it is not yet possible to ensure that nearly all children get a full education. This is because schools either still do not exist in many rural communities, or there has been a slower uptake of the available places than in the towns. Nevertheless, as the number of schools has grown, this problem is increasingly confined to the smallest and most scattered rural and nomad communities. Universal schooling provision has been most difficult to achieve in



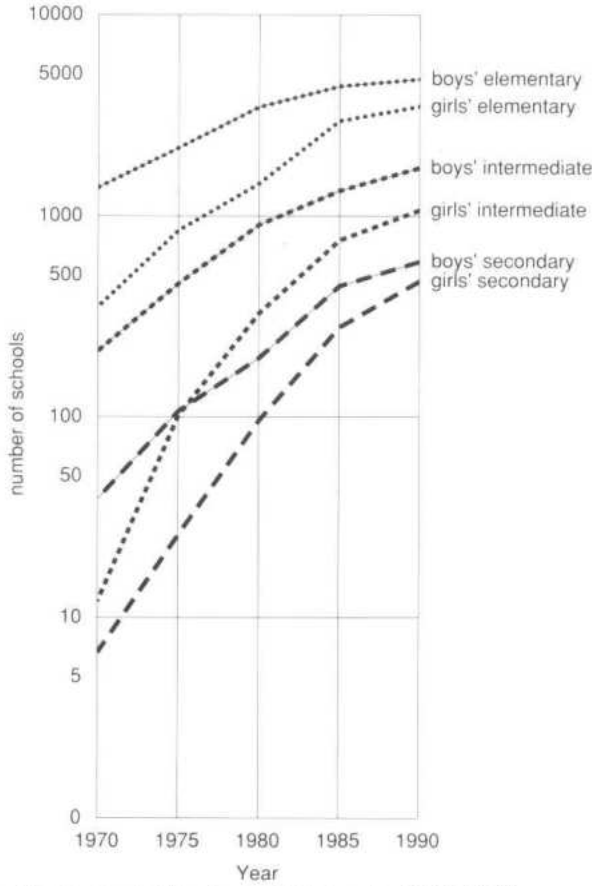


Figure 32: Increase in Number of Schools, 1970-1990

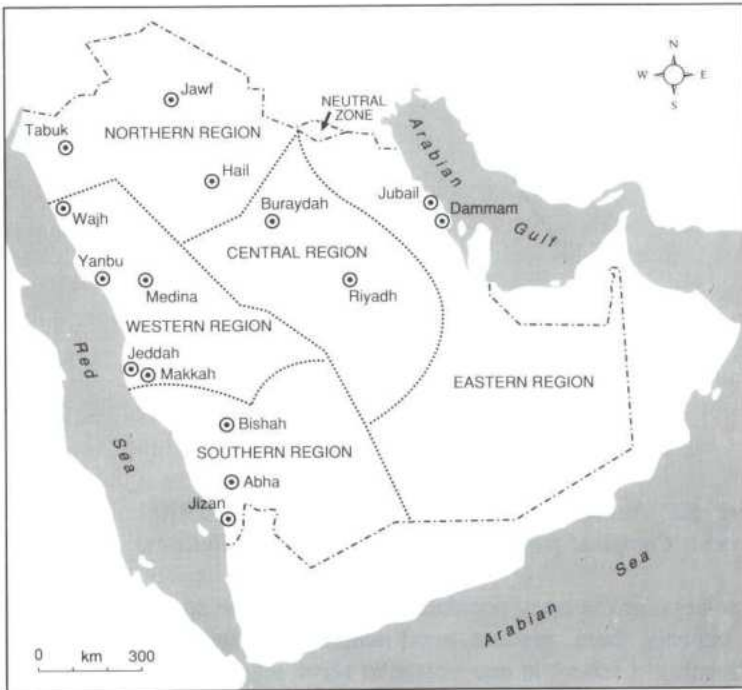
Source: Compiled from Ministry of Education Bulletins, 1992

these areas because the small populations of many of the communities, and the large distances between them, produce pupil numbers too small for viable school catchments. Opening a school in one village to serve several others around it, may still only tap part of that catchment, if the distances are too great to get the children to school. This can be a particular problem for the provision of secondary schooling in areas of small, scattered communities because secondary schools generally need to receive more students from larger catchments than elementary schools in order to provide a range of specialisms. Furthermore, students who have to travel far to a school are also more likely to drop out of it before graduation. While a quarter of students in the Kingdom drop out before the 6th grade, this rate appears to be higher in rural areas (Presley and Westaway, 1989).

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### **School Enrollments**

A major obstacle to the examination of the effectiveness of the spread of schools to achieve a high level of schooling across all parts of the Kingdom is the difficulty in gaining detailed data on the provision of schools, and their catchments, in each administrative area. Surveys of school catchments, and the proportion of children in each catchment who go to school, are needed. More studies are also required of trends in dropout, and repetition, rates which reduce the effectiveness of the provision. Even without that data, however, major regional disparities can be seen in student enrollments at the broad scale of the Kingdom's five planning regions. The areas covered by those regions are shown in Figure 33.



*Figure 33: The Regional Planning Divisions of Saudi Arabia*  
*Source: Fourth Development Plan, 1985*

Regional trends in schooling levels can be illustrated using data for 1985 and 1990. This also allows a comparison of regional disparities to be made, in a later section, with health care provision on the same regional basis. 1985 was also the launch-year for the Fourth Five-Year Development Plan, which recognized the

need to deal with the major disparities emerging across the regions, so that the period 1985 to 1990 represents a pivotal time for the more equal provision of services across the Kingdom (Ministry of Planning, 1985).

Table 34 shows for 1985 the percentage of children enrolled, in the three levels of schools, in each planning region. These percentages can be compared with the percentage of the estimated total population - shown in the first column - which lived in those regions. The population figures are 1985 estimates based on the 1974 census totals. While these estimates may not have fully allowed for recent changes in the population share of the five regions, and the demographic composition of each region's population, they are sufficiently accurate for the purposes of the argument being made here. It is fair to assume that the number of school-aged children in each region is proportional to its total population, so that any major differences between the percentage of the Kingdom's total population in a region and its school enrollments reflects a level of enrollment above or below the national average.

*Table 34  
Percentage Regional Distribution of National Enrollments, at the  
Elementary, Intermediate and Secondary School Levels, 1985*

Province	% Total Population	% Kingdom's Enrollment of Boys			% Kingdom's Enrollment of Girls		
		Elem.	Inter.	Sec.	Elem.	Inter.	Sec.
Western	33.9	35.6	36.3	37.3	35.4	39.7	39.0
Central	23.5	24.7	24.2	25.2	25.7	29.2	32.2
Eastern	11.3	13.6	15.7	16.0	14.4	16.5	18.1
Southern	21.1	18.5	16.4	13.8	15.8	8.6	5.0
Northern	10.2	7.6	7.4	7.7	8.7	6.2	5.7
No. of Children in School (thousands)		727.4	219.6	88.1	513.2	132.6	65.1

*Source: Compiled from data published by the Ministry of Education, Educational Development Data Center, 1986, and Third Statistical Yearbook, The General Presidency for Girls' Education, 1985.*

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The Table shows that, in 1985, the Western, Central and Eastern Regions had a higher proportion of the Kingdom's enrolled students at all three school levels than their populations would suggest they should have. In contrast, the Southern and Northern Regions appeared to be under-represented in their enrollments. For example, whereas Western Region held 33.9 percent of the Kingdom's population, it had significantly more than 33.9 per cent of all the students enrolled in elementary, intermediate and secondary schools, both for boys and girls. The same was the case for the Central and Eastern Regions. The proportion of children enrolled in school in these three regions was greater mainly because more of their populations are concentrated into urban areas, giving them more ready access to schools. Drop-out rates were also lower. The under-enrollment of children in the Southern and Northern Regions was particularly noticeable at the secondary level in the Southern Region where, with 21.1 per cent of the Kingdom's population, it had only 13.8 per cent of all boys in the Kingdom's population enrolled at the secondary level, and 5.0 per cent of all girls enrolled at that level. These low enrollments resulted from a combination of factors. These included the dominance of more scattered rural communities - rather than towns - in these regions so that many children have only poor access to schools; a greater reluctance by rural families to take up schooling opportunities; and a greater tendency for those in school in rural areas to drop out after a few years.

### **Numbers Of Schools**

While Table 1 shows that there were clear disparities in 1985 in enrollments between the three core regions and the fringing regions to the North and South, the pattern of school provision was rather more complex. In order to tackle the lower rates of enrollments in the fringing regions, and greater distances to schools, those regions sometimes gained rather more schools than their population numbers might suggest was appropriate. Compiled on the same basis as Table 34, Table 35 indicates that the Southern Region had a high proportion of the Kingdom's elementary schools, reflecting the need to bring schools closer to more of the scattered rural communities in order to encourage higher rates of enrollments.

For example, the Southern Regions' 21.1 per cent of the Kingdom's population was served by 27.0 per cent of all the elementary schools for boys, and 24.5 per cent of all the elementary schools for girls. In contrast, the more urban-centred Eastern and Western Regions appeared relatively under-provided with schools at that level in relation to their populations. Clearly this resulted from a policy aimed at providing universal education which, in the rural regions, required many more schools, but of a smaller size, to be set up in order to ensure that they were close enough to the scattered population of children they were seeking to serve. In the



Table 35  
*Percentage Regional Distribution of Elementary, Intermediate and Secondary Schools, in Relation to Regional Population, 1985*

Province	% Total Population	% Kingdom's Boys' Schools			% Kingdom's Girls' Schools		
		Elem.	Inter.	Sec.	Elem.	Inter.	Sec.
Western	33.9	30.8	29.7	29.3	28.3	33.9	31.0
Central	23.5	25.2	25.1	25.5	27.4	28.4	32.0
Eastern	11.3	7.0	11.0	11.8	10.0	13.5	19.0
Southern	21.1	27.0	25.1	21.6	24.5	15.7	9.2
Northern	10.2	10.0	9.1	11.8	9.8	8.5	8.8
No. of Schools		4404	1330	457	3075	785	294

Source: As for Table 34.

cities and towns, with more compact catchments, more children could be catered for with rather fewer schools, each having a larger intake.

### Average Sizes Of Schools

Table 36 gives the average pupil intakes in schools in each region in 1985, and confirms that schools in the Southern and Northern Regions had smaller numbers of pupils than schools in the other regions. The larger average intakes to the schools of the Western, Central and Eastern Regions reflected the dominance of urban populations in these regions, where small catchment areas still produced large numbers of children. This is in contrast to the smaller intakes of mainly rural schools in the fringe regions. Here, establishing more schools with small catchments ensured easier access for children from the scattered rural communities characteristic of these regions. Increasing access to schools by limiting their size, however, has its drawbacks, both in costs of school provision and in the quality of the schooling provided. In particular, it is a more difficult policy to apply beyond the elementary level because higher level schools need to be large enough to provide a range of specialisms. The difficulty of making a satisfactory trade-off between catchment and school size, to achieve greater accessibility to higher level schools in rural areas, is demonstrated by the small proportion of the Kingdom's

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students in secondary education in the Southern and Northern Regions in 1985 which was referred to earlier.

*Table 36*  
*Regional Distribution of Average Pupil Intakes by Elementary, Intermediate and Secondary Schools, 1985*

Province	Boys' Schools			Girls' Schools		
	Elem.	Inter.	Sec.	Elem.	Inter.	Sec.
Western	191	202	240	209	198	279
Central	162	159	187	156	172	223
Eastern	321	236	256	241	206	210
Southern	113	108	120	108	93	121
Northern	126	134	123	148	123	143
National Ave.	165	165	189	167	169	221

*Source: As for Table 34.*

### **Schooling Changes Since 1985**

Having established that broad-scale disparities existed in education provision and uptake in 1985, it is appropriate to see to what extent they have been reduced in more recent years. Table 37 shows that encouraging progress has been made. In the case of boys' education, enrollments between 1985 and 1991 grew more rapidly in the lagging Northern and Southern regions than in the three core regions - where enrollments were already high - so reducing the previous disparities quite markedly. Total enrollments rose by 51.6 per cent in the two fringe regions compared with 27.2 per cent in the three core regions. Furthermore, enrollments rose at a faster rate in the fringe areas for each of the three levels of schooling. The highest rises occurred at the secondary level, with a 92.6 per cent rise in the Southern Region and a 74.3 per cent increase in Northern Region. It was particularly at this schooling level where the fringe regions had earlier lagged so far behind the core regions.

Table 37  
*Percentage Increase in Enrollments in Boys' Schools  
 by Regions, 1985 - 1991*

Province	Elementary	Intermediate	Secondary	All Levels
Western	14.7	13.7	34.7	16.2
Central	34.4	40.8	56.4	37.7
Eastern	37.2	30.2	49.7	36.7
Southern	45.7	55.2	92.6	50.7
Northern	52.1	50.4	74.3	53.6
National	31.2	32.3	53.6	33.3

Source: Ministry of Education Data Centre, Statistical Section, 1991

Table 38 shows a similar, but less dramatic, change occurred with enrollments in girls' schools. This was partly because enrollments in the core regions were still increasing rapidly so that the lagging regions were less able to close the gap. It must also be noted that the less dramatic figures partly result because the data for girls' schools only covers the three years from 1985 to 1988, compared with the six years covered by the data for boys' enrollments. Nevertheless, the Table shows that girls' enrollments rose 37.5 per cent in the fringe regions compared with 29.6 per cent in the core regions. Part of this smaller difference in the increase in enrollments in the core and fringe regions also reflected the low increase in the Northern Region in contrast to the Southern Region. Thus, whereas the Southern Region increased its share of enrollments in girls' secondary schools from 5.0 per cent in 1985 to 7.1 per cent in 1988, Northern Region made little real headway. Yet, even Southern Region's 7.1 per cent share of the Kingdom's enrollments for girls at the secondary level remains low for a region which has one-fifth of the Kingdom's total population. On the basis of these rates of enrollment increase, it is likely to take several more years for girls in the fringe regions to have levels of access to schools equal to those enjoyed in the core regions.

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*Table 38*  
*Percentage Increase in Enrollments in Girls' Schools,*  
*by Regions, 1985 - 1989*

Province	Elementary	Intermediate	Secondary	All Levels
Western	28.9	28.4	39.4	29.8
Central	25.8	28.4	33.1	27.1
Eastern	34.2	30.6	32.5	33.3
Southern	38.4	89.1	97.2	46.5
Northern	15.3	51.7	40.8	22.3
National	29.2	35.4	39.1	31.3

*Source: Compiled from Statistical Books, General Presidency for Girls Education, 1985 - 1989.*

Part of this growth in enrollments at all levels, and in all regions, has been achieved by opening new schools, and part has come from increasing the intake of pupils in each school. The particular balance between these two influences on the size of the school population has varied from region to region. Whereas the number of boys' schools in the core regions increased by 14.0 per cent between 1985 and 1991, enrollments grew by 27 per cent. This suggests that growth in school intakes played as important a part as the establishment of new schools in boosting the school population. In the fringe regions, however, enrollments of boys increased by 51.6 per cent while the number of schools expanded by 33.3 per cent. This would indicate that, in those regions, the opening of new schools played a larger part in providing better access to schooling than increases in intakes by individual schools. This is to be expected in rural areas where it is often the distance to a school which will determine access to it. Hence opening new schools, rather than providing more places at existing schools, is likely to increase access more in the rural areas, whereas both approaches have been appropriate in the urban areas.

While much progress appears to have been made in the late 1980s in raising enrollments in girls' schools in all regions, less was achieved in reducing regional disparities because new schools were opened at a lower rate between 1985 and



1988 than the rate at which enrollments grew. Thus, pupil numbers in girls' schools grew by 31.3 per cent over those three years, similar to the increase for boys over the six year period to 1991. But whereas for boys these extra enrollments were supported by a 21.1 per cent increase in the number of boys' schools, there was only a 14.2 per cent increase in the number of girls' schools. That is, more of the expansion in girls' schooling depended upon increasing the average intake into existing schools. As a result, disparities in access to schools remained wider for girls between the core and fringe regions because many girls in rural and desert areas still live too far from the nearest school.

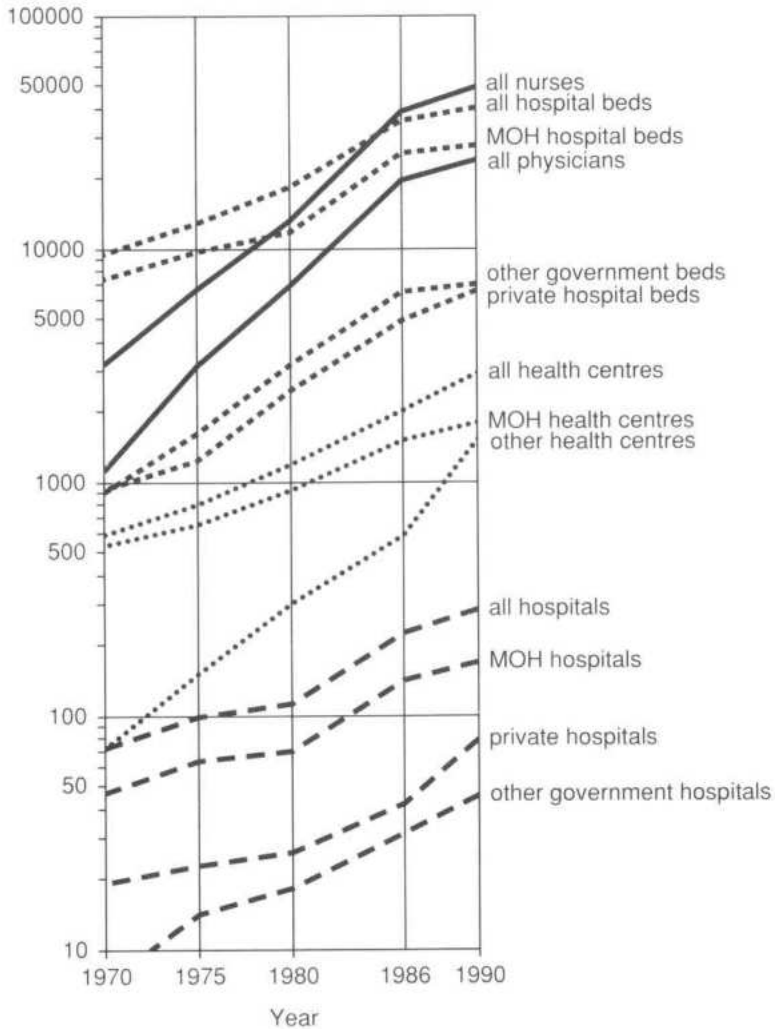
### **Regional Disparities In Health Care Provision**

If massive educational expansion had not, by 1990, been able to remove all major disparities in schooling opportunities between the regions, the inequalities in access to health care were equally apparent. The Kingdom has a long-standing policy of providing health services free of charge to all citizens, and all of the national plans have emphasized the importance of good access to medical care (Ministry of Planning, 1985). The responsibility for this provision lies overwhelmingly with the Ministry of Health (MOH) but there are 14 other agencies, like the military, the Red Crescent Society, and school health units which provide some health care for their employees, or for certain sectors of the population. There is also a private health care sector, but it is estimated that about 80 per cent of all medical care is provided by the Ministry of Health through its hospitals and health centres.

There are a variety of indicators that can be used to measure the impact of the massive investment which has been provided in medical facilities over the years under the various national plans. For example, the number of Ministry of Health hospitals increased from 47 in 1970 to 163 in 1990. MOH hospital beds increased from 7165 to 25835, an increase of 261 per cent over the same 20 year period. Similar levels of increase occurred in the provision of health centres, while the rates of increase in number of medical staff were even greater. The growth in a range of health facilities and staff between 1970 and 1990 are shown on a logarithmic scale in Figure 34. While there is little detailed information yet available on the impact of all this health care provision on the overall health of the nation, or on the health of the population in each region, general levels of health do appear to be improving. For example, crude death rates fell from 23 per thousand to 7 per thousand between 1965 and 1991, and average life expectancy rose 15 years, although factors other than medical care probably played a part in these changes (World Bank, 1992). On the other hand, the rapidly improving prenatal mortality rate for hospi-

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tal births, which in the 5 years from 1981 fell from 33 to 26 per thousand live births in 1986, can be more directly attributed to improving health care standards resulting from the rapid expansion in the availability of hospitals at that time (Ministry of Health, various dates).



*Figure 34: Increase in Medical Facilities and Staff, 1970-1990*  
 Source: Ministry of Health Annual Reports.

Despite this expansion, and in part because of the speed with which it has come about, major disparities still exist from region to region both in the level and the quality of health care provision. As in the case of disparities in educational provision, poorer levels of health care are still found in the rural regions than in the more urban-centred regions. This disparity results in part from the early emphasis the Ministry of Health placed on providing health facilities, especially hospitals, in the major urban centres, and in those districts where a large part of the population was relatively easy to reach. While there have been major attempts in recent decades to spread health-care facilities from the big cities into the smaller towns and then to the rural areas, the more urbanized regions retain their leading position on most health-care indicators. To some extent this is inevitable since specialist medical services, like special hospitals, can only be located at a few central points. Nevertheless, semi-specialist services, like dentists and x-ray facilities, need to be well spread out in order to make them more accessible to all the population, including that in the villages and desert areas.

Some of the disparities which still existed in 1985 in health-care provision across the Kingdom's five planning regions are indicated in Table 39 where, to aid comparison with the information already presented on education, the data is presented on the same basis as in Tables 34 and 35. On the evidence of their share of all MOH hospitals, hospital beds and physicians, it can be seen that the Southern and Northern Regions lagged well behind the Central and Western Regions, while the Eastern Region's share of facilities lay close to what would be expected if facilities were fairly spread across the Kingdom in relation to its population distribution. Only in the provision of health centres was the Southern Region - with 27.0 per cent of the Kingdom's health centres for 21.1 per cent of the population - better provided for than other regions. This clearly reflected its more scattered rural population. Not only is that dispersed population more difficult to serve with hospitals, but many more local health centres were needed to bring basic care closer to the villages. This also raises the cost of provision, and can lower quality because health centres with small catchment populations can only justify limited levels of staffing and equipment. In contrast, city populations benefit from having access to larger and better equipped local health centres as well as a range of hospital facilities.

As was seen in the improvements in school provision between 1985 and 1990 across the regions, further expansion of health care provision since 1985 has helped to reduce disparities between the core and fringing regions. As Table 40 shows, by 1990 the fringing regions not only had a greater share of health centres, but also of hospitals, than their population totals seem to warrant. But these were mainly small, general hospitals, which were dispersed across these regions in order to help

## *Provision and Use of Social Services*

*Table 39*  
*Percentage Regional Distribution of Various Health Care*  
*Facilities, in Relation to Regional Population, 1985*

Province	Population	Hospitals	Beds	Physicians	Health Centers
Western	33.9	39.1	46.3	38.4	28.3
Central	23.5	27.7	25.0	28.4	26.8
Eastern	11.3	11.4	9.4	10.9	10.5
Southern	21.1	16.2	11.7	15.9	27.0
Northern	10.2	7.6	7.6	6.4	10.3
Totals		105.0	20796.0	9257.0	1306.0

*Source: Compiled from the Annual Health Report,  
Ministry of Health, 1985.*

overcome the greater problems of making facilities accessible to the more scattered communities characteristic of these regions. Most of the specialist hospital facilities were to be found in the large cities of the core regions. But, overall, the similarity in the regional distribution of hospital beds, and of physicians, to that of the Kingdom's population would indicate that the Ministry of Health had achieved a more equitable pattern of health care provision by 1990.

However, when the facilities provided by government agencies other than the Ministry of Health, and by the private sector, are included alongside those of the Ministry, marked inequalities of regional provision remain. Most of these facilities, including some major specialist hospitals, are located in the main cities, so adding to the provision and the choice of people living in and close to those cities. Similarly, the rapid growth of the private health-care sector in recent years with government encouragement has mainly benefited those living in the urban areas where nearly all of the private hospitals and clinics are located. The more rural regions have gained little from the expansion of private health-care. For example, the Western and Eastern Regions which held less than half of the Kingdom's people in 1990, had three-quarters of all the private hospital beds, in addition to nearly half



Table 40  
 Percentage Regional Distribution of Various Health Care  
 Facilities, in Relation to Regional Population, 1990

Province	Population	Hospitals	Beds	Physicians	Health Centers
Western	33.9	25.8	33.3	29.0	23.2
Central	23.5	23.9	25.9	26.5	23.7
Eastern	11.3	9.2	10.4	12.8	10.9
Southern	21.1	25.8	20.5	21.7	29.6
Northern	10.2	15.3	9.9	9.3	12.5
Totals		163.0	25835.0	12959.0	1668.0

Source: Compiled from the Annual Health Report,  
 Ministry of Health, 1990.

of the beds in all Ministry of Health hospitals. In contrast, the Southern and Northern Regions had only 6 (9 per cent) of the 64 private hospitals, and 69 (17 per cent) of the private health clinics.

As a result, marked regional disparities in total levels of health care provision remained in 1990. Table 41 shows the ratios of numbers of population in each region to the medical staff and hospital beds provided by the combined health care sectors in each region. While the average ratios for the whole Kingdom are good compared with most developing countries, and rank close to many developed economies, it is clear that the populations in the Western, Central and Eastern Regions were still much better served in 1990 than those in the Southern and Northern Regions even though some of the more marked disparities which existed in 1985 had been removed. There were often little more than half the number of physicians, or hospital beds, at the disposal of people in the rural north and south of the Kingdom, as against the best provided urban region. However, it must be remembered that these data are for very large areas, so that even within that middle belt of more urbanized regions, there are rural and remote areas which would have been much less well served than the cities.

## Provision and Use of Social Services

Table 41  
Average Number of Population in Each Region Served by  
Each Physician, Nurse and Hospital Bed, 1985-1990  
(including all Ministry and private facilities)

Province	Physician		Nurse		Hospital Bed	
	1985	1990	1985	1990	1985	1990
Western	799	855	386	434	329	435
Central	818	736	422	363	472	448
Eastern	682	557	279	240	372	353
Southern	1462	1011	626	473	979	578
Northern	1736	1079	834	591	683	565
Totals	926	818	435	398	455	461

Source: As for Table 40. Population for 1990 based on World Bank estimate.

### Regional Case Studies

It has been shown that there are major broad-scale disparities of provision in the school and health care systems of the Kingdom. These disparities have not been entirely removed by the recent further expansion of the systems. But it is also clear that many of the largest disparities reflect the problems of providing for widely varied patterns of settlement and population distribution. That is, disparities of provision also occur within individual regions, each of which includes a wide range of settlement types. It is only at this level of analysis that detailed surveys can be made to relate patterns of use of services to the patterns of provision. The remainder of this paper presents two case studies of service provision and use, the first for the health care services in one of the core *emirates* (Al-Qassim), and the second for education and health care in Asir, which is one of the less well-provided *emirates* on the Southern fringe of the Kingdom. Further studies of this type are essential to obtain a fair assessment of variations in the provision and uptake of school and health facilities across the Kingdom.

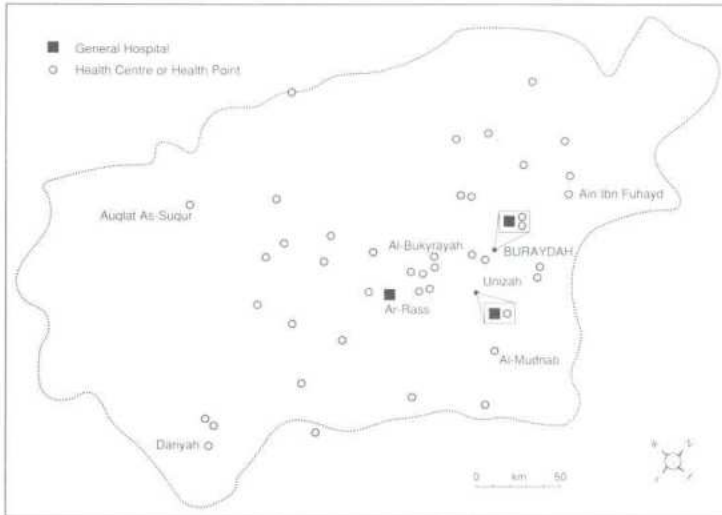
### Case Study I: Disparities In Health Care Provision And Use In A Core Area: Al-Qassim *Emirate*

Al-Qassim is one of the Kingdom's smallest *emirates* with an estimated population of 550,000 in 1986, about 5 per cent of the national total. 48 per cent of its population lives in five main towns, with the remainder dispersed across 350 rural settlements and 170 *bedouin hijar*, or watering points (Al-Ribdi, 1990). As such, it is typical of the core urban-dominated regions of the Kingdom. As one of the Kingdom's 14 health regions, Al-Qassim also has an integrated health care system, with its own headquarters in the *emirate* capital, Buraidah. This health system attempts to meet the needs of the whole *Emirate*.

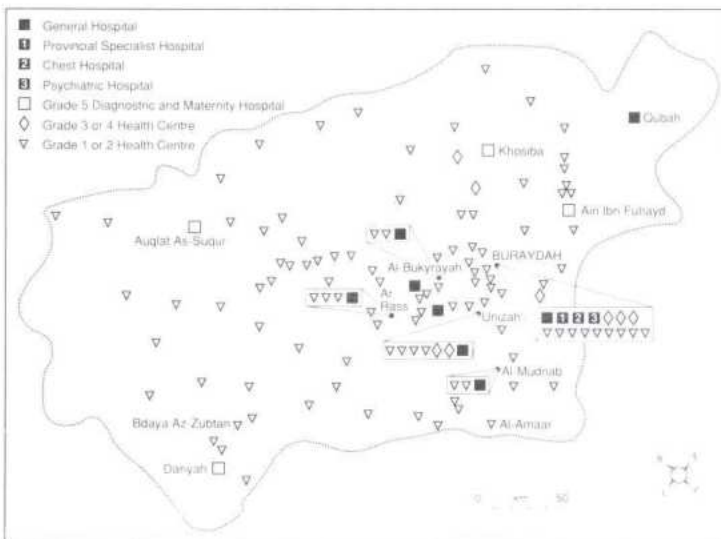
Most of Al-Qassim's health care facilities have been established very recently. The first dispensary was opened in Buraidah in 1941, but by 1956 there were still only six dispensaries to serve the whole *Emirate*. Even by 1973 there were only three hospitals and 47 health centres, whereas in 1990 there were 14 hospitals and 131 public health clinics run by the Ministry of Health. These were supplemented by a range of facilities - including 14 health clinics - provided by other government agencies and the private sector. The patterns of MOH hospitals and health centres, as they were in 1973 and 1990, are shown in Figures 35 and 36 where it can be seen that the *Emirate's* general and specialist hospitals have been concentrated within the urban core of the *Emirate*, around Buraidah and other towns closeby. Here, they are most accessible to the majority of the population of the *Emirate*. By 1990 a widely dispersed pattern of health care centres had evolved from the much less complete pattern of health points which, in 1973, only offered very basic care. Virtually every village with more than 500 inhabitants, and some with less, now has a health centre with its own doctor. However, most of the rural health centres are of low status because they cater for only small numbers of patients, whereas the urban health centres are mainly of a higher grade in order to meet the needs of larger numbers of patients, and to better supplement the work of the hospital outpatients departments which are also located in the towns.

Much of Al-Qassim's population can now be considered well provided with health facilities. Not only does the urban population have easy access to a wide range of facilities, but basic care is available in all the rural and remote areas. The effects of this are seen in the 8-fold increase in hospital admissions which has occurred since 1973, and a 12-fold increase in visits to health centres. These rates of use of health-care facilities are well above average for the Kingdom, and make the *Emirate's* health system typical of the better-provided urban core regions of the country.

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*Figure 35: Distribution of MOH General Hospitals, Health Centres and Health Points, 1973*  
 Source: Al-Ribdi, 1990.



*Figure 36: Distribution of MOH General and Specialist Hospitals and Health Centres by Grade, 1990*  
 Source: Al-Ribdi, 1990



It is, of course, inevitable in a *Emirate* with such wide variations in settlement size and density - from Buraidah with 248,636 inhabitants according to the 1992 Census down to *bedouin* areas where the average occupancy is 1 person per square kilometer - that equality for access to health care is almost impossible to provide, no matter how well dispersed the services. But the Ministry of Health has done much to equalize access to basic care, although the catchment area of rural health centres remains much larger than those in the towns. For example, the average distance between health centres in Buraidah City is only 2.3 km compared with over 20 km in the remote areas of the *Emirate*. Yet the number of rural health centres has been increased so much - to reduce their catchment areas - that each has to deal with far fewer patients than most urban centres.

In fact, by the mid-1980s so much effort had already been put into dispersing primary care to small rural and remote communities, that most of the health centres which have been opened in the most recent years have been located in the urban core of the *Emirate*. This has happened despite the fact that many urban people prefer to use hospital outpatients departments for their primary care. The renewed expansion of urban health centres was undertaken to help meet the increased health care needs of an urban population which had grown faster than expected. The increased demand for good quality care was also putting excessive pressure on existing health centres and hospital outpatients department. The survey showed that only 20 per cent of the *Emirate's* health centres in 1987 were within 15 km of Buraidah even though that area contained 40 per cent of Al-Qasim's total population. As a result, several of the health centres in the urban area were dealing with an average of 3000 patients per month compared with only a few hundred in some of the health centres in more remote parts of the *Emirate*. This was increasing the waiting times and threatening the quality of care in the urban health centres.

A detailed field survey of one-third of the *Emirate's* health facilities in 1987, including a questionnaire survey of over 1400 health centre users, examined this widespread pattern of health care (Al-Ribdi, 1990). It included 541 users at five health centres (and other facilities) in Buraidah City, 143 users at three health centres on the rural edge of the city and 192 users of four health centres in the remote desert area around Dariyah in the South-West of the *Emirate*, to cover three widely different areas. Table 42 lists some of the major characteristics of those users. Despite the progress made in equalizing access to health care provision across all parts of the *Emirate*, the survey showed that marked disparities still exist in the quality and level of use of facilities.

## *Provision and Use of Social Services*

In particular, the population in the rural areas remains at a disadvantage when seeking better quality, and more specialist, treatment. Not only are rural health centres less well-equipped, or less well-staffed, than the urban ones, but the townspeople also have hospitals closeby. They can make choices about where to seek treatment, with several MOH centres closeby, as well as hospital outpatients departments and private clinics to choose from. In fact, urban patients commonly move from doctor to doctor to seek better treatment, although the introduction of patient registration and referral systems should limit such switching. In contrast, in the desert communities which were surveyed the patient can get basic treatment only at the local health centre, or turn to traditional healers. If he needs specialist care, the hospital is over 140 kms. away.

The study also looked at the use of facilities. Here it was clear that some disparities in the levels of use of the health-care system are largely outside of the control of the health providers. For example, females and children made up smaller proportions of users of most health services than adult males, even though there is little evidence that men had a greater need for the services. The greater mobility of the adult male population allowed them to seek out health care more readily than women or children. This was less marked in the urban areas, however. The predominance of male doctors in most health centres would also deter female patients.

While the Al-Qassim survey remains one of the most comprehensive studies of the use of health services across a wide range of community sizes, it was not possible to survey that part of the population which still lacks adequate access to the services. It could be argued that none of the urban population was cut off from care, but some rural people may still be denied access to care, or to the quality of care, they need because they lack the necessary mobility. The results of the questionnaire to users of the health care centres showed that about two-thirds of them lived within 5 kms. of the centre they were visiting, a figure which is close to that obtained in similar surveys elsewhere in the Kingdom (Al-Ghamdi, 1981). However, many communities in the remote areas still lie more than 5 kms. from their nearest health centre, so that many of them, particularly the old and infirm, may still lack sufficient access. Table 42 shows that in the Dariyah area 42.2 per cent of the health centre users came more than 5 kms. and 14.6 per cent came over 15 kms. But the fact that, even in this area of dispersed settlement, the majority of users came less than 5 kms. suggests that many who live further from the health centres make only limited use of them.

At the same time, patients with mobility to reach health centres in the more remote parts of the *Emirate* generally made more frequent use of them than did

Table 42  
 Selected Characteristics of Behavior of Users Sampled  
 at Health Care Centres in Three Areas of Al-Qassim  
 Emirate, 1987

Characteristics	Dariyah (4 centers)	Buraidah Rural (3 centers)	Buraidah City (various*)
Ave. distance to next nearest health center (km)	23	7	2.3
Ave. distance to nearest hospital (km)	144	16	2.8
Number of users sampled	192	143	541
Urban users as % of total	2.1	9.1	93.2
Nomad users as % of total	23.4	4.2	.4
Visit frequency			
% users making 1-2 visits/year	11.5	14.0	23.6
% users making >12 visits/year	36.5	38.5	27.2
Distance to reach health center			
% traveling <5 km	57.9	70.6	72.7
% traveling 5-15 km	27.6	25.2	20.3
% traveling >15 km	14.6	4.2	6.9
% users taking >20 minutes to to reach health center by car	19.8	2.1	9.5
Reason for choice of health center:			
closest to home	88.5	73.4	49.5
reputation	3.1	16.8	35.5
referred from elsewhere	0.5	0.7	9.2

\*The Buraidah city sample was taken from 5 Ministry of Health centres, a hospital outpatients department, and some private clinics.

Source: Al-Kadi, 1990.

## *Provision and Use of Social Services*

the townspeople. This is despite the greater distances the rural people had to travel to reach their nearest health centre. Several factors could help to explain these different use rates. The patients at the urban health centre were generally better-educated and may only visit a health centre when they are aware of a real need to see a doctor. In contrast, many users of health centres in rural areas treat their visits as social occasions, and because the health centres are less busy than those in the towns, they are not deterred by long waiting times. Urban patients may make fewer, repeat visits to any particular urban health centre because they can easily find another doctor elsewhere in the town if the first doctor they visit fails to cure their illness. The survey also showed that only half of the users in the city chose their health centre because it was the nearest to their home. Almost as many chose it because of its reputation or because they were referred to it by another doctor. Nearly all patients at each rural health centre chose it because it is the only one near to them, again emphasizing that whereas people in the rural areas of the *Emirate* now have reasonable access to basic health care, the townspeople also have access to greater choice and quality of care.

### **Case Study II: Disparities In Education And Health Care Provision And Use In A Fringe Area: Asir *Emirate* And Its District Of Sarat Abid'ah**

The Al-Qassim survey showed that there is now wide access to basic health care across the *Emirate*, and the provision for the urban population is largely differentiated from the rural by the greater level of choice and quality available. However, in other parts of the Kingdom which lack major urban centres, like Asir *Emirate*, access to services remains patchy, as the next case study demonstrates.

Asir *Emirate* covers about 4 per cent of the area of the Kingdom but contains more than 10 per cent of its population, so making it one of the more densely settled *emirates*. Yet, there are no large towns. The twin towns of Abha and Khamis Mushayt, with 143,000 inhabitants in 1985,<sup>[1]</sup> form the only urban nucleus, all other centres being little more than enlarged villages. Only 17 per cent of the population is urban. The *Emirate's* high population density results from a well developed pattern of village communities - more than 4000 of them - spread out along the valleys of the mountain chain (the Sarat) which bisects the *Emirate* (Figure 37). West of the Sarat is the low, hot and desertsic Tihama coastal zone which stretches down to the Red Sea; to the East of the Sarat is a dry plateau which, like the Tihama, is only lightly-populated by nomadic groups. Being peripheral to the main urban centres of the Kingdom, Asir's economy remains dependent on farming and grazing which accounts for 70 per cent of employment.



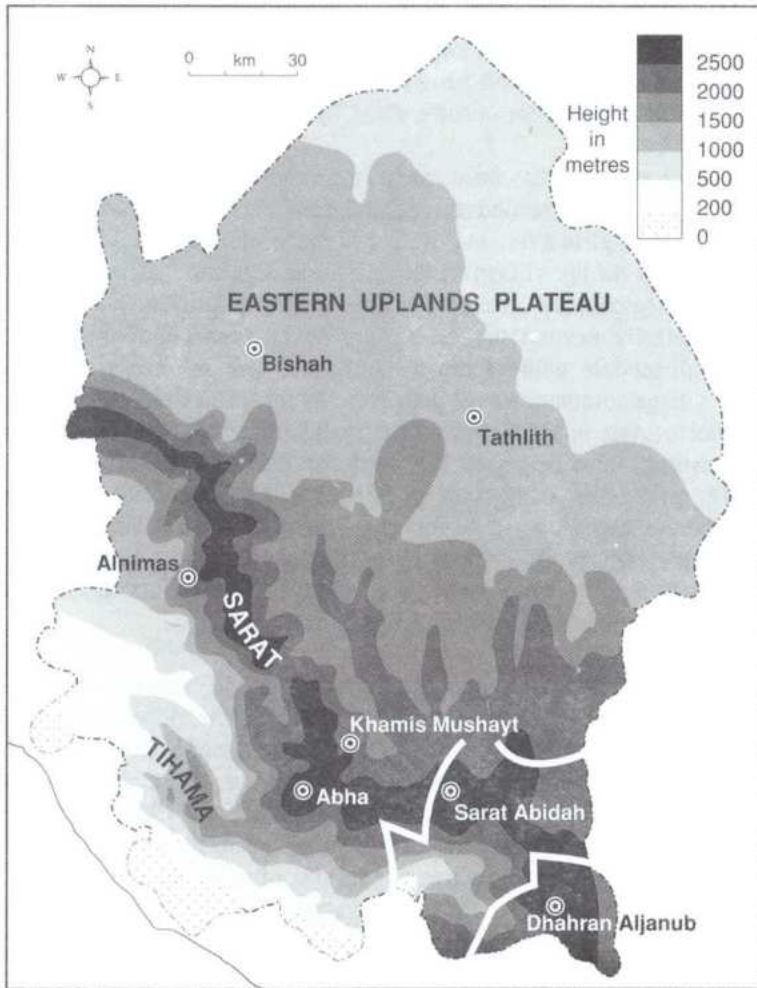


Figure 37: Topographical Features of Asir  
Source: Kenzo Tange and URTEC, 1978.

As a major portion of the less-developed Southern Region of the Kingdom, Asir has made much progress in recent year to reduce the gap in educational and health services between it and the better-provided regions to the North, as was indicated earlier. In 1974 only a quarter of children in the *Emirate* were in school, and most of those were boys in the towns and larger villages where the only schools existed. Yet by 1986 over 700 elementary schools had been established for boys, and another 450 for girls, spreading primary schooling to many more villages, so

### *Provision and Use of Social Services*

that recently the emphasis has been switched to building more intermediate and secondary schools. Yet the scale of the task in the *Emirate* - to bring education to a quarter million children spread across 4000 villages - is inevitably a long-term one which has seen faster progress in some areas than others.

Much more progress has been made in providing the needs of boys than girls. Whereas a half of boys of secondary age in the *Emirate* were in school in 1986, less than 20 per cent of girls were. As the paper made clear earlier, the small size and scattered character of the village settlement in the *Emirate*, as in the remainder of the Southern Region, has greatly limited further improvements in educational provision, especially beyond the elementary level, because of the extra costs of providing small schools, with catchments of limited size, in order to bring education to as many village communities as possible. At 99 pupils per school, the average size of school in Asir in 1986 was much smaller than the national average of 165. But Asir's average also disguised the need for many more very small schools in many of the rural areas if they are to be easily reached by village children. For example, whereas boys' schools in the urban area of Abha-Khamis Mushayt averaged 324 pupils each in 1986, those in the surrounding villages each took an average of only 118 pupils, while many other village schools were much smaller than this. One school in the Tihama had only 9 pupils.

The predominantly rural population pattern has also shaped the provision of health care. The poor health conditions of much of the population and the very limited medical facilities which existed in the *Emirate* until the 1960s ensured that the provision of primary care in the main villages was given priority. Under this programme the few health points which existed in the early 1960s were replaced, by a network of 214 health centres, most of them set up in the early 1980s. Now Asir has a larger number of health centres for its size of population than other provinces, although most are small centres with very limited facilities, just to meet the basic needs of local village populations. Even so, only 1 village in every 20 has a health centre.

Much less attention was paid, until very recently, to the establishment of a pattern of hospitals, and other specialist provision, but this is now rapidly expanding. There are now 17 hospitals, most of them small, general units to serve each district of the *Emirate*. As a result of this expansion, the numbers of inpatients treated has doubled in five years. Even so, the system of hospitals and health-care centres is still limited, compared with other regions. This can be indicated in several ways. For example, in 1985 there was only one doctor for every 1500 inhabitants compared with a national figure of 1 to 926, and that gap was still far from closed in 1992.

### The Provision And Use Of Services In A *Sub-Emirate* Of Asir *Emirate*

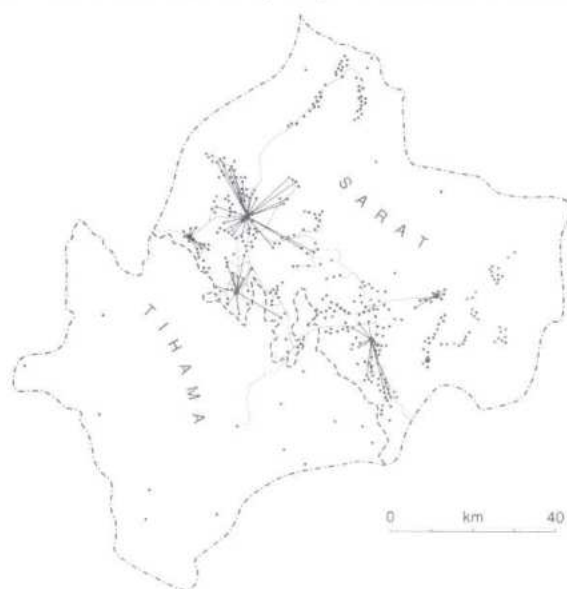
In view of the size of the *Emirate*, it was necessary to limit the detailed examination of the use of health and education services to one typical part of it (Al-Kahtani, 1988). The Sarat Abidah district serves that purpose as one of the *Emirate's* six *sub-emirates*, lying South of Abha (Figure 37). The *sub-emirate* had a population of 118,000 in 1987, most of which lives in about 400 villages scattered across a central mountain area. To each side of this zone are the more lightly-settled Tihama and Eastern areas, which mirror the physical and settlement patterns of the wider region. The main population centre of the *sub-emirate* is Sarat Abidah town. Although it contains the greatest concentration of services in the *sub-emirate*, including a hospital, secondary schools and most of the commercial services, Sarat Abidah town is a little more than an enlarged village. In 1988 it had a population of 4500.<sup>[2]</sup>

To best meet the schooling needs of the many small village populations in the *sub-emirate*, priority in recent years has been given to creating a spread of elementary schools. These have been set up in the larger villages, so that their catchments include the surrounding smaller settlements. By 1987 there were 77 elementary schools for boys, and 37 for girls. But 340 villages still lacked any school, and several remained many kilometers from the nearest village with a school. There is no official data on the number of school-aged children in each village as a basis for estimating total schooling needs. However, the 1988 survey showed that the elementary schools were receiving boys from virtually all of the villages, whereas the girls' elementary schools were receiving pupils from only about two-thirds of the villages. The spread of schools at the intermediate and secondary level clearly left many villages too far from a school for their children to use it. Figures 38a and 38b show that the catchment areas of boys' and girls' intermediate schools in 1987 excluded many villages. Girls attending the intermediate schools came from only 26 per cent of the villages in the *sub-emirate*, and boys from 67 per cent. Several villages, particularly in the Tihama, were still well over 25 kms from an intermediate schools. Many boys were still far from a secondary school. While the school bus system provides a partial solution to this problem, many boys at the secondary level also chose to drive themselves to school. There was only one secondary school for girls, located in Sarat Abidah town, so that very few girls could get more than an elementary education. In short, schooling opportunities remain at best limited in those parts of the *sub-emirate* beyond the areas closest to Sarat Abidah town and the other larger villages.

Because of the intensely rural character of the *sub-emirate*, health-care provision is also limited, although improvements to facilities available in Sarat Abidah



*Figure 38a: Catchment Pattern of Boys' Intermediate Schools*



*Figure 38b: Catchment Pattern of Girls' Intermediate Schools*  
*Source: Ministry of Health Annual Reports.*



town are benefiting people over wider parts of the area. Health care is provided by 23 health care centres spread around the main villages in the *sub-emirate*, and a new small general hospital in the town. Even so only 6 per cent of villages have a health-care centre. Nearly all of them offer only very basic care. Larger health-care centres are only found in Sarat Abidah town and a few other larger villages, and these are more heavily used because they offer a better service.

The survey revealed that 38 per cent of all visits to health centres in the *sub-emirate* were to the health centre in Sarat Abidah town. Not only did it offer a range of facilities not found in the other centres, but is employed the only two female doctors in the area. As a result, visitors came to this centre from most parts of the *sub-emirate*, often by-passing their local centre. The survey showed that 83 per cent of those who visited that health centre traveled more than 10 kms., and a fifth of them over 20 kms. In contrast, all the other health centres received the great majority of their patients from within 5 kms. The larger catchments from which the small number of higher-grade health centres attracted patients, shown in Figure 39b, contrast with the very limited catchments of the lower-grade centres (Figure 39a). Yet even this level of provision could still leave many people - particularly those with less mobility - in several of the communities with too little access to medical care. In short, major parts of the *sub-emirate*, particularly in the Tihama, still lack services, and the quality and range of services are limited everywhere outside of the one small urban centre.

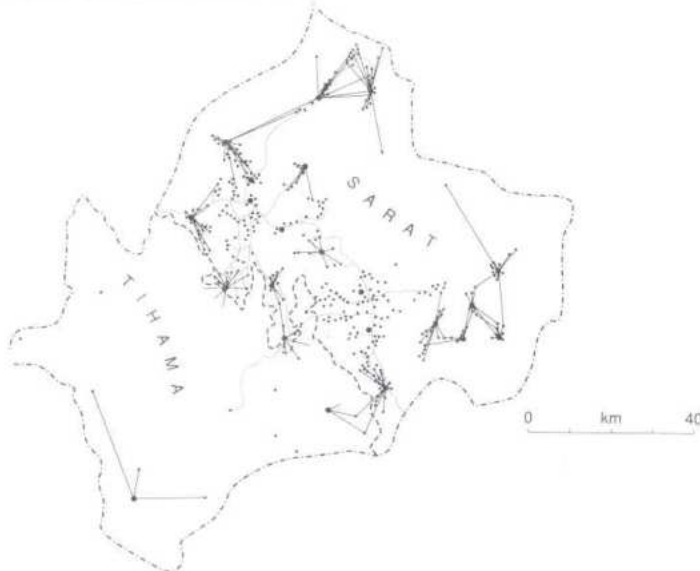
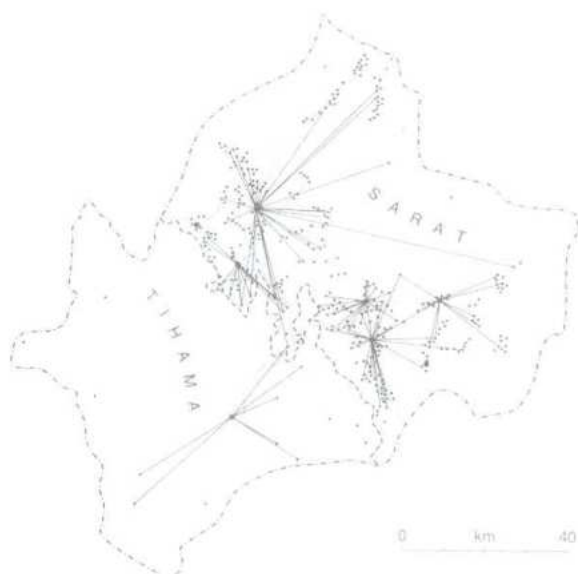


Figure 39a: Distribution of Patient Trips to Lower Grade Health Centres

## *Provision and Use of Social Services*



*Figure 39b: Distribution of Patient Trips to Higher Grade Health Centres*  
*Source: Al-Kahtani, 1988.*

## **Summary And Conclusions**

The patterns of provision and use of services, illustrated in the two case studies, reinforce and add detail to the conclusions that can be drawn from the broad-scale data examined in the first part of the paper. Those conclusions fall into six parts:

1. At the regional level the Kingdom's urban-dominated core regions are better provided with educational and health-care services than the fringe regions.
2. As those services have been further greatly expanded in recent years, some of the disparities in provision from region to region have been reduced, but have not yet been eradicated.
3. Disparities are also found within regions, with the urban areas having much greater access than the rural communities to a wider range of services.
4. Within the regions with higher levels of urbanization more progress has been made in spreading basic educational and health facilities to the rural areas around

them. In the regions dominated by rural populations, taking services to every village is a longer-term task.

5. The case studies revealed differences in the way in which urban and rural people use the services, and a wish by rural people to have the greater quality of services normally available in the urban areas. As universal access to services comes closer to being achieved, there could be a need for detailed studies of the amount of use made of different types of service in order to provide them in the most effective way.

6. The recent rapid growth in the urban population, which is expected to continue in the future, will place increasing pressure on the health and education services. The need for more services in the towns and cities, as urbanization continues, may slow further progress towards the provision of better access to a wide range of services in rural communities. Yet policies intended to limit urban growth partly rely on providing better social services in rural areas in order to slow out-migration to the cities. Even if those policies succeed in slowing the depopulation of rural areas, further urbanization is assured by the continuing dependence of the economy on foreign labor. The 1992 census shows that non-Saudis - who also impose heavy demands on social services - make up 27 per cent of the total population, and are mainly found in the big cities.

### **Notes From the Editors**

The 1992 population census does not support the population statistics provided in the study for some of the settlements. We believe that the differences are due to the differences in the areal coverage used in these studies.

- [1] While the total population of Abha and Khamis Mushayt estimated in this study for the year 1985 is 143,000, the 1992 census figure is 330,186.
- [2] While the 1988 estimate of population in this paper for the town of Sarat Abid'ah is 4500, the 1992 figure is 2500.





# 10

## The Role Of State In Shaping Urban Forms

Faisal A Mubarak

The 20th century has witnessed the proliferation of the nation-state supplanting traditional and colonial powers as the dominant political force. Yet, research on the role of the state in urban development and change in developing countries is lacking. In this study, I focus on modern urban development in Saudi Arabia since the promulgation of the new nation-state in 1932. In the new nation-state, propitious economic conditions coupled with a stable political environment have forged an urban model blending evolving urban needs with Western capitalist planning initiatives.

Historically, modern urbanization is a result of the industrial revolution which began in the West in the late 18th century. Unlike the developed world, most urbanization in the third world countries has been influenced directly by colonization and later through the process of transfer of technology. Urbanization is not merely an increase in urban population and number of cities; rather it is a process of economic and industrial development conducive to an increase in the number of cities and to the process of labor specialization. However, responding to exogenous political and economic forces, urbanization in developing countries has been beset by numerous problems, such as over urbanization, urban poverty, etc. Such problems pose challenging questions for urban research (Smith and Feagin, 1987).

Thanks to oil wealth, the urban development programmes of the Saudi government have been influential in stimulating the national economy, shifting the socio-economic significance of the traditional social structure and urban network, creating a new urban hierarchy, and virtually conditioning most of the new urban scene by undertaking construction works, subsidizing private investment in the built environment and formulating municipal land use and building controls. In return, urban planning activity and public policy making have been the prerogative of the central government.

### Study Framework

The role of the central government in creating and shaping both the urban structures and the urban forms of Saudi settlements will be assessed by focusing on

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government decisions. Three settlements are selected to provide a variety of urban forms; administrative, industrial, and agrarian.

The first and largest of these towns is Riyadh representing modern urban form, the capital, which represents a large, administrative city. With a population of approximately 2.8 million in 1992, it is the political heart of Saudi Arabia and the home of the Royal authority. The second town Arar, representing industrial urban form, is a city of 108,055 residents in 1992 located in the Northern region of the country. Arar was originated anew from a small industrial camp in the early 1940s. The third settlement is Huraimla, a small town with a population of 6,632 in 1992, located fifty miles North of Riyadh, represents agrarian urban form.

This Chapter, presents a brief review of the traditional urban attributes of the Islamic built forms. Such attributes will be compared with the Western-imbued, technically based forms using the three case studies. The chapter concludes by emphasizing the characteristics of the Saudi Arabian urban development model compatible with the local environment.

## **Role Of Islamic Legislation In Shaping The Traditional Muslim Urban Forms**

In light of prevailing technology, the pre-industrial city everywhere else in the world, kept its size to the limits of the major mode of transportation within the city, that is the "walking city". The limitation of technological know how was both a characteristic of the pre-industrial town and a hindrance to its growth. Commenting on the nature of Islamic urbanization, Riaz Hassan (1969) stated that any "analytical study into the development of Islamic urbanization must start with an examination of Islamic religious traditions; for, certain features of religious tradition of Islam are underlying factors in the evolution of Muslim urbanization". Orientalist (historians studying Muslim culture) have emphasized Islam's great influence on the towns inhabitants, the urbanization phenomenon, and the internal structuring of towns that are dominated by a Muslim majority and/or under a Muslim state (Abu-Lughod, 1987).

Eisenstadt and Shachar (1987) state that "the identity of the Islamic religious community dependent on observance of the Holy Law (*Shari'yah*) as interpreted by the *ulama* [jurists] and enforced by the rulers." Literature has emerged emphasizing the significant impact of Islamic law, based on the Koran and biographical documentation of the Prophet's life (*hadeeth*), on Islamic urbanization and the building of towns (Al-Hathloul, 1981). Muslim jurists adapted these two sources

and drew rulings which determined a wide range of cases, from land tenure to the design to house fenestrations with respect to neighbors' privacy. Aspects of Islam's influence on traditional Islamic urban forms can be highlighted as follows:

1. **Major Land Uses.** Upon his arrival to Madinah, Prophet Mohammad introduced the tradition of allotting parcels of land, *kittat* (singular *kittah*) to the various tribes to settle new converts. This procedure was later copied by his companions who spread Islam in Asia and Africa. The *kittah* became the unit of distribution for residential purposes to dominant social units, that is the tribe, based on the number of their members. The internal organization of the individual *khittah* was then left to each group to decide according to their own needs. Moreover, following the Prophet's precedence, his heirs ordered that new settlements be organized around the Friday prayer mosque, *jami*, and a suq to be added and governed by certain rules similar to these ordained by the Prophet (Al-Hathloul, 1981:31).

2. **Land Tenure.** Islamic jurisprudence, *fiqh*, played an important factor in shaping the transformation process of the individual dwellings and estates. For example, the right of *shufa'ah*, preemption, gave priority to the neighbor to buy a neighbor's property upon his or her decision to sell it. This helped quarters maintain their social character for longer periods of time. Another example of the rule of *fiqh* in shaping building processes in traditional Islamic societies was that of inheritance. Islam prescribed a detailed formula concerning a just distribution of one's inheritance. Islamic inheritance law laid down procedures by which individual dwellings could be partitioned between family members. The partition also called for the provision of access (passageways and new footpaths) to the newly subdivided units, a process which led to the familiar tortuous circulation networks and the irregular shapes of dwellings and blocks of Muslim cities (Al-Hathloul, 1981, Hakim, 1986).

3. **The Circulation Space.** The delineation of minimum width of streets was set according to the Prophet who ordered that streets, for public passage, should have a width no less than 7 cubits (3.23-3.50m.). If such passageways were meant to serve for cattle and sheep they should be 20 cubits. However, for footpaths, serving in between dwellings for private passage, 4 cubits were required. The jurist also developed regulations relating to the height of a person riding a camel to decide the minimum height of passageways (Hakim, 1986).

4. **Elimination of *Dharar* (Harm).** The principal of *dharar* is based largely on the prevention of harm to other residents, including nuisance resulting from the juxtaposition of incompatible land uses next to each other. Islamic jurists



derived rules from the Koran and the Prophet's Tradition, *Hadeeth*, which ultimately determined the location and functions of land uses in the traditional Muslim city. The concern over harm in the form of infringement on the privacy of residents was reflected in the design of fenestrations. The locating of windows and doors were also regulated with regard to neighbors' rights and privacy. It was reported that the eminent Muslim scholar, Malik, said "One has no right to create something that will inflict harm or damage to his neighbor, even when that is done is within his own property" (cited in Al-Hathloul, 1981).

**5. Islamic Institutions In the City.** The aforementioned rulings influenced the building processes in traditional Muslim built environments. The jurists' decisions, however, required the provision of civil and legal duties that oversaw their implementation. The *qadi* (judge) and the *al-muhtasib* (an officer in-charge with the *hisbah*, that is the promotion of good and prevention of evil), in addition to other several officers who were charged with building-related activities, played major roles in bringing peace, justice and order to the city. The *qadi's* responsibilities comprised a wide range of duties including the supervision of actual building processes, as was the case in Tunisia where the *qadi*, or his representative, walked through the city and assured that threatening walls be demolished even though no complaint was delivered to the court. In Madinah, the *qadi's* duties included the measurement of streets' widths in front of houses to be built to assure compliance with set standards and neighbors' rights of access and privacy. Judges were reported to consult, *Ahl ul-Khibrah* (the experts) in matters of technical knowledge and advice on damage, ownership disputes and assessment of transactions, rents and the rebuilding of *waqf* (property donated as charity)<sup>[1]</sup> (Al-Hathloul, 1981, Hakim, 1986).

Moreover, under the Islamic Shari'yah residents enjoyed substantial authority and control over their quarters, including the construction of their houses, the creation and definition of semi-private space versus the public. Only in cases of disagreement among neighbors was legal arbitration sought by the contending parties. The appreciation of technological and environmental conditions by the inhabitants and the supremacy of the dictates of Islamic Shari'yah led to the striking similarities of the Muslim cities.

## **Traditional Urban Attributes And The Emerging Urban Forms**

Saudi Arabia's traditional built forms were reflected in towns' dominant subsistence economies, which barely fed their denizens, a fact which explained the rural-pastoral homeostasis. Towns lacked economic vigor to spark urbanization.



Lying in one of the backwater regions of the aging Ottoman empire, most of Arabia's traditional settlements floated in a semi-political vacuum. Generally speaking, settlements were ruled by tribal dynasties. The larger princely settlements reflected the magnitude of power nodes and settlements of petty traders, craftsmen and peasants and other smaller settlements, in one form or another, joined major centres in mutual economic and security agreements. The politically dominant towns served as centres of sub-regions which included their own hinterland of smaller villages.

Traditional built environments in Saudi Arabia exhibited several characteristics. They included (1) a considerable degree of autonomy in the running of local affairs, (2) subsistent economies, (3) traditional forms of land ownership marked with spontaneous conversion of undeveloped land, and treating land as a social resource, (4) socially informed and environmentally compatible organic growth, (5) self-help and community-supported production of mixed-income houses, and (6) a great degree of the responsibility for providing public services fell on the shoulders of the inhabitants with minimum intervention by the governing body.

### **Semi-Local Autonomy And Government Control**

Traditional town rulers enjoyed semi-autonomy and inhabitants exercised exclusive rights in the regulation of local growth. *Amirs* had substantial local power in the control of local affairs of settlements. The organization of a settlement's form largely comprised of sub-territorial enclaves denoting quarters dominated by large families represented by notables who were consulted by the *amir* in local and inter-settlement matters. Under the traditional form of leadership, local rulers relied on a combination of personal discretion, Islamic legal advice, consultation with prominent town inhabitants, and if necessary, coercion to maintain their power. In some cases, authority of *amirs* spilled over and influenced tribes and villages living within their vicinity. As such, the "...environment was shaped through mutual agreement and time-tested convictions with minimum intervention from authorities" (Akbar, 1988).

### **The Economy**

Agriculture was the mainstay of most of Arabia's settlements, while coastal settlements added fishing and other maritime means of livelihood. Makkah and Madinah were exceptions. The consecration of Makkah and Madinah as holy cities following the advent of Islam in the seventh century A.D. bestowed prosperity on the two towns due to the pilgrim-related economy. Still, most Arabian settlement economies were limited to simple forms of *bazaar* economies of the Middle East:

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a family organized activity, typically a risk-minimizing one, rather than profit-seeking venture. Due to dispersed political control, geographic isolation and the precarious harsh environment of the desert, economic growth was inadequate to stimulate economic prosperity and urbanization. Riyadh and Huraimla typified the norm in Central Arabia, in which a majority of the population was involved in agriculture and the whole surplus fed only a small population. Inhabitants bartered commodities (e.g. grain and dates) in exchange for services and goods, especially in Central Arabia. The use of coins was rare<sup>[2]</sup>.

Traditional towns relied on Islamically established methods of collecting taxes (e.g. *zakat*) and fees from those living within their confines and the hinterland (Al-Abbadi, 1980). Islamic institutions, specifically, *waqf* (religiously-inspired foundations whose benefits were dedicated to the public) were instrumental in paying for buildings and the running of bridges, schools, drinking fountains, mosques, road-houses, all of which today are shouldered by the central government. In short, traditional town economies were informal, intervention by political authorities was minimal. The informality was derived from freedom of entry, reliance on local resources, family ownership, small-scale operation, intensive labor and skill acquired through apprenticeship.

### **Urban Planning And Design**

In traditional built environments, town building was largely the outcome of customary building practices based on an accumulation of locally developed experiences and adaptation to local resources. In comparison to modern built environments, land uses were limited, paramountly residential. Endogamy and kinship, rather than land prices sorted inhabitants in the settlement. Animated technology explained the compactness of built forms and the lack of transportation technology impeded sprawl, a common feature in Saudi Arabia's contemporary forms. Concern with security and control placed a premium on space. Circulation space was minimized, narrow and functionally proportionate to pedestrian flow. It was a residual of residential and other built spaces<sup>[3]</sup>.

At the level of individual buildings, town architecture conformed to Islamically-inspired social norms, which reflected on the overall patterns of town morphology<sup>[4]</sup>. For example, fenestration conformed to mutually tacit agreements of respect for privacy between neighbors<sup>[5]</sup>. Internal organization of space reflected climatic concerns, for instance, the presence of a courtyard, and especially in well-to-do households, gender-specific as well as ecologically compatible concerns. The emphasis on clustered and attached residential units of non-regular lots fed by a tortuous and shaded street network contributed to a benign macroclimate in the

torching summer of Arabia, as opposed to the microclimatic approach in the modern individual villa model and other free-standing buildings using modern technology (e.g. electricity and insulation) leaving large areas of the city prone to adverse weather conditions.

While growth adhered to experience and social norms, physical organization of towns according to a preconceived plan, with distinct uses and a programme of implementation, was unknown. No central (e.g. royal) statutes, no large-scale development, no master plans, and no strong legislative controls existed. None of the apparatuses typical of modern urban planning under an established state were developed. The modern modes of transportation and systematic intervention and large-scale urban production under the auspices of a powerful central state seemed, prior to the discovery of oil, centuries away. Finally, adding new land uses such as houses, commercial uses or farmland was done only after securing the affected parties' rights.

### Land Ownership And Distribution

Settlement growth was slow and simple, residents encroached on raw land as need arose. Incremental appropriation of new land conformed to the slow demographic pace, increases in population were occasionally countered by abrupt natural disasters and random fatal clashes among settlements' populations and or with marauding nomads. Austere, subsistence economies offered limited financial resources, a factor which diminished the economic viability of town expansion to the political leadership. Under such conditions, urban growth was economically irrelevant, for land was perceived as a social resource, rather than for its exchange value. Moreover, the Islamic principle of *shuf'ah* was acknowledged under the Islamic legal code. Under the *shuf'ah* principle, a neighbor was given priority to buy next door properties at the given exchange price. As such, *shuf'ah* helped to form quarters which housed relatives though they belonged to different income categories.

Documentation of growth, legislation and building activity was virtually nonexistent. Typically, ownership was established once converted into urban or productive uses. Legal registry of property was seldom needed, if required it was usually handled by the town's clergy. Property title was based on conventional recognition by the community<sup>[6]</sup>. Land ownership was identified with its users. If a dispute arose, witnesses were summoned and the *amir* or the *qadi* resolved the dispute. Finally, lots were irregular, development (e.g. buildings and farmland) determined land layout and ultimately, the town's configuration (whereas in modern built forms, lot dimensions are set beforehand, taking the form of large parcels laid at one time).



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### Home Ownership

In traditional towns, homes were built by residents according to simple building practices utilizing mostly available and locally produced building materials. As the size of a household increased, rooms or new dwellings were built, and if space was available, attached to old ones. Conversely, following the death of a head of a household, if the will stipulated, family members were allowed to subdivide a house, or an estate, between those eligible under the Islamic legal system of inheritance into smaller units. Consequently, new *afniah* (e.g. courtyards and semi-private space abutting the house) and alleys were made to provide for accessibility to the new units. Willy-nilly, this accounted for the modifications of already built buildings resulting in the three-like, tortuous passages, and the numerous cul-de-sacs feeding clusters of residential units in a typical Muslim city. Occasionally, a gate was installed at the beginning of a cul-de-sac leading to a cluster of homes belonging to an extended family.

In the case of the construction of an annex or a new house, family members, relatives and neighbors helped both physically and financially in the construction effort. As in the case of marriage, a household head could borrow from individuals to help pay for the needed material or labor. No loaning institutions (e.g. banks or public agencies) existed. In Central Arabia, houses were built using millennia-old construction methods (load-bearing walls of sundried mud bricks and tree trunks, branches and palm reeds). Construction took a relatively short time, for example, fifty days for a mid-size house<sup>[7]</sup>. Better off households could hire a professional builder to do the construction.

### Public Land Use And Infrastructure

"In traditional societies," Eric Monkkenon (1980) wrote, "individuals shared enough central cultural conceptions to create and maintain an operating vision of order". In traditional Muslim towns, inhabitants maintained their neighborhoods. Cities that served as seats for princely powers and centres for a larger periphery, were endowed with economic advantages and tax income. They were bestowed with public baths, street lights, paved roads and waste water disposal systems, such as sewers, which were largely paid through imposed fees and taxes. Also, provisions for public facilities, such as mosques, water, shelters and schools were largely made possible through voluntary charities, *waqf*. For instance, in Riyadh, early in this century, there were 42 water fountains and washing facilities (*masaqi*), all provided through the institution of *waqf*<sup>[8]</sup>. However, towns in poor regions lacked infrastructure. In such regions, settlements were little more than dormitory communes of mere self-supporting residences and pedestrian precincts: settled communi-



ties whose members were glued by a mutual concern for survival. Inhabitants collectively participated in the maintenance of their habitat and contributed to decision making affecting their everyday lives<sup>[9]</sup>.

## Case Study Of Contemporary Urban Forms

The following three cases examine how the modernization programmes under the new nation-state have substituted centralized forms of bureaucratic organization, government-subsidized urban economies, and western forms of architecture and urban design and planning for traditional cultural attributes. To alleviate the pressures of urbanization, the government has sought technical forms of urban legislation and planning, that is physical planning, to curb surmounting negative aspects of development, a process which contributed tremendously to the transformation of Saudi built forms.

### *Case Study I: Riyadh: An Administrative Urban Form*

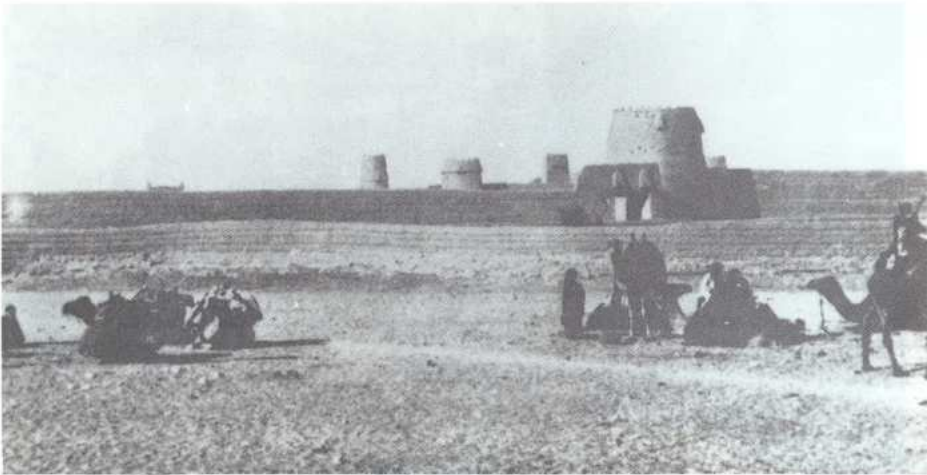
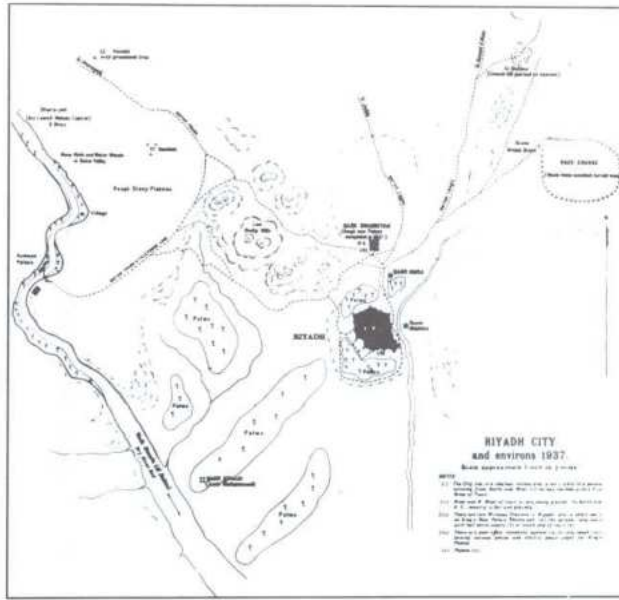
Riyadh's significance in modern history dates back to 1824, when it was chosen by Turkey Bin Abdullah Bin Mohammed Bin Saud for his new settlement. The decision was taken by Turkey following the destruction of Dirriyah, the previous power base of the Saud house, the ancestral father of today's Al Saud clan. Following propitious regional and worldwide political tides, Abdulaziz, Turkey's grandson, at the age of 19 years old, managed to recapture Riyadh in 1902 and started a series of battles, conquests and treaties with Arabia's influential tribes and towns' rulers which ended with him being the King of a new nation-state, the Kingdom of Saudi Arabia in 1932. According to Rendel (1938), Riyadh's traditional form corresponded to the familiar layout of traditional (preindustrial) Islamic cities. It consisted of a central mosque, a palace the commercial complex, *suq*, and residential uses. King Abdulaziz's palace dominated the focal point of the walled, wading city. The palace, which was higher than the rest of the town's buildings, was a fortified structure with two 'massive' towers and was surrounded by a network of smaller mansions, occupied by the royalty, accounted for a considerable part of the city area (Figures 40 and 41).

The bazaar abutted the Palace square from the East. The North end was closed by a double colonnade, *misbah*. Next to the square was the Great Mosque, which in addition to the other eleven neighborhood mosques served the religious needs of the population. Due to the increasing number of transients who paid tribute to the King, the market grew disproportionately to the town's remaining

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*Figures 40: Riyadh Still a Walled Town in 1950.*  
*Source: Al-Hussayen, 1989*



Figures 41: A) Riyadh during the 1930s. Source: Daghistani, 1985.  
B) The Eastern (Batha) side of the wall where Aththemairy Gate existed. Source: El-Haj, 1989

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areas giving the town a population of 60,000 at the end of the fifth decade. (Figure 42).



*Figures 42: The Old Suq (market) was located outside the major and comprised small structures.*

*Source: El-Haj, 1989.*



In addition to the busy core, there were seven major neighborhoods, *hila* (Al-Washmi). These walled districts reinforced the segmentation of the major social groups comprising the towns social composite. The dwellings faced inward to the quiet and cool courtyard, presenting blank walls to the street. The relatively commodious, multipurpose and light-filled courtyard offered a microclimate of cool breeze and shade which contrasted with scorching temperatures outside. The courtyard served several familiar functions and conformed to the social emphasis on privacy. This compact mass resembles a mosaic of solid and void formed by shaded and open surfaces and built volumes, interspersed by courtyards, and conformed to societal imperatives. At dusk, the city was sealed off from the outside world and town life was reduced to naught with the closure of the gates.

The end product was a compact town with clearly defined open spaces, social turfs, edges, neighborhoods, and quarters, easily discerned by locals. The compact traditional building process placed great value on efficiency: the carefully arranged street network and houses paid due respect to means, nature and social values. The collective respect for contextual factors was a matter of survival in a desert environment. The walled town was estimated by Philby (1946) to measure 700 yards along its North wall, and about 650 yards East-West, or approximately 100 acres. He estimated the town population at 19,000 people in 1919. By the 1930s it reached 30,000.

### **Early Suburbanization And Uncontrolled Development**

The preindustrial walled town's social diversity was limited by the latent potentialities offered by its desert ecology, coupled by the utter lack of advanced technology conducive to a well established division of labor. The emergence of a developed, complex power structure under the King Abdul-Aziz, coupled by the flow of oil revenues, paved the way for far-flung changes in the society's cultural aspects, including that of urban development. These changes were reflected in the physical expansion of communities in the town. The importation of modern technology constituted a major factor in the creation of large, permanent urban communities outside the wall. The improvements in water-drilling technology allowed for agricultural surplus, freeing peasants and *bedouins* to engage in the increasing work opportunities in the modern economy. Transportation technology and road building enabled farmers and *bedouins* to deliver crops, livestock and other foodstuffs to the growing town.

During the 1940s and 1950s, better security, economic growth and more imports of automobiles inexorably loosened the ties that once bound the urban functions of society to tightly defined cores: decentralization began to operate.

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Modern transportation technology and communication then set in motion the process of suburbanization. The political security under King Abdulaziz guaranteed order needed to facilitate economic progress and specialization in the society. Riyadh was soon to grow beyond its walls.

Riyadh's rising prosperity came with the King's decision to keep it as the political and administrative capital of the nation-state but at the cost of crowding. The royalty stood at the apex of the new moneyed class eager to abandon the compact, walled centre. King Abdul-Aziz was the first to see the fashion for this desert suburbanization. In 1938, at his behest, a new palatial complex, al Murabba', was built to accommodate his growing administration, two miles Northwest of the walled town. The royal compound included a spacious mansion, a royal guest house, administrative buildings and a garage for himself and his royal entourage. The royal suburb was linked by a concrete motor track to the old town. For the first time ever, the automobile was imposed on the pre-industrial urban form, and accounted for in subsequent development. The royal palace of al Murabba' radiated opulence in an impoverished society that experienced the nadir of depravity.

One more reason behind this spate of early immigration was the improvements, though meager, in better services made available by the fledgling government. This resulted in attracting local migrants to the new national capital seeking the hospitality of the royalty, city services, and work opportunities. Shantytowns emerged in the open space within the walled city. In such a desert environment, water had a crucial factor in the fueling of city-ward migration. The increasing oil royalties enabled the King to order the installment of motor-driven pumps to obtain water from deep grounds, hitherto inaccessible by animated means. As new water supplies were tapped using the new technology, herdsmen and ruralites alike rushed to the growing capital. Serving as a major driving force behind suburbanization, water drilling technology helped in the provision of water in abundant quantities, a factor which in turn encouraged the germination of new development in the vicinity of the walled town.

Meanwhile, the well-to-do citizens of Riyadh found relief outside the wall, from the cramped quarters within the city. The royalty, who were among the first to reap the benefits of affluence, used their wealth to create insulated enclaves beyond the city proper, hence escaping the constraints of traditional common place urban life. Members of the court sought the surrounding farms to construct recreational outing pleasure compounds. New "urban villagers" brought increasing alienation to the previously quaint settlement's residents who virtually knew each other. The surrounding green belt, to which the city's name, Riyadh (the gardens) referred, was the first casualty of that expansion. Hamlets sprouted in close proximity

to the town, and soon grew into suburbs. Nevertheless, Riyadh maintained its pre-industrial compactness during the 1930s and 1940s due to technological limitations and a financial squeeze.

The increasing use of the automobile contributed greatly to the explosive horizontal expansion of the compact city into sub-nuclei dotting the city rim, while uncontrolled ribbon-development set the pattern for the town's road network for decades to come. These thoroughfares some of which led to other major regions and important cities within the Kingdom, took the form of radiating tentacles, reaching out for resources that contributed to the city's impressive growth. Immigrant mud communities proceeded circulation system, while *bedouins* shantytowns' were strewn about with little attention paid to uniformity. New streets were laid out as needed, usually following the tracks naturally established by men and animals as they took the most convenient paths.

#### **State Intervention: Building The Royal City, 1950s-1960s**

From a mere pre-industrial, placid burg, Riyadh expanded to a bustling hive of incessant building and construction. From its primeval penury, the Capital became the showcase of government pride, conveying a sense of legitimacy for the growing influence of the government in an era witnessing the crumbling of monarchies in nearby Middle Eastern countries. The modernization of Riyadh is epitomized in the new urban development programmes during King Saud's reign. Philby (1959) hailed King Saud's zeal for building. He started with the construction of his own royal estate in Annasiriyah, three miles to the Northwest of the old city. To Philby, Annasiriyah represented the first step toward the "modernization" of Riyadh. It was here that Saud "decided to develop an estate worthy of his high rank and his progressive views." With its aberrant architecture and its wide boulevards laid mostly on a grid street layout, Annasiriyah profoundly altered the traditional urban order and served as a lasting progenitor, a model for future emulation in other urban development. The builders of Annasiriyah had sought to satisfy the King's craving for modernization and prosperity.

#### **Planned Community For Administrative Purposes**

The modern section of Riyadh is best exemplified in the birth of the new suburb, al Malaz. Following the transfer of government ministries to Riyadh in the late 1950s, imposing row of modern buildings to house the new ministries and the growing military apparatus, including a staff college and military hospital, was built by the government. In contrast to the traditional architecture, both in style and scale, the modern row of ministerial structures were built to show sturdy engineer-



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ing and flatulent exhibitionism, and exercise in vanity reflecting the rising influence of the nation-state (Figure 43).

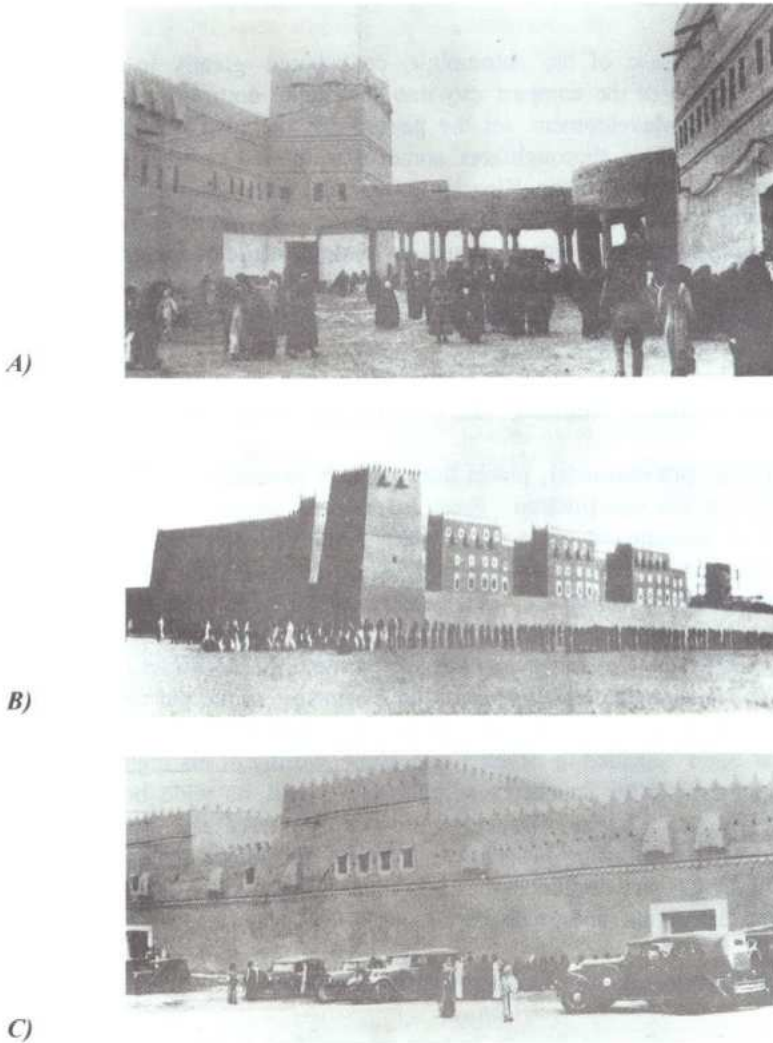


Figure 43: A) The palaces of King Abdul-Aziz in the walled town; B) The King's new Al-Murabbaa' Palace (c. 1939); C) Court's members such as the King's brother construct new palaces outside the walls.

Source: El-Haj, 1989

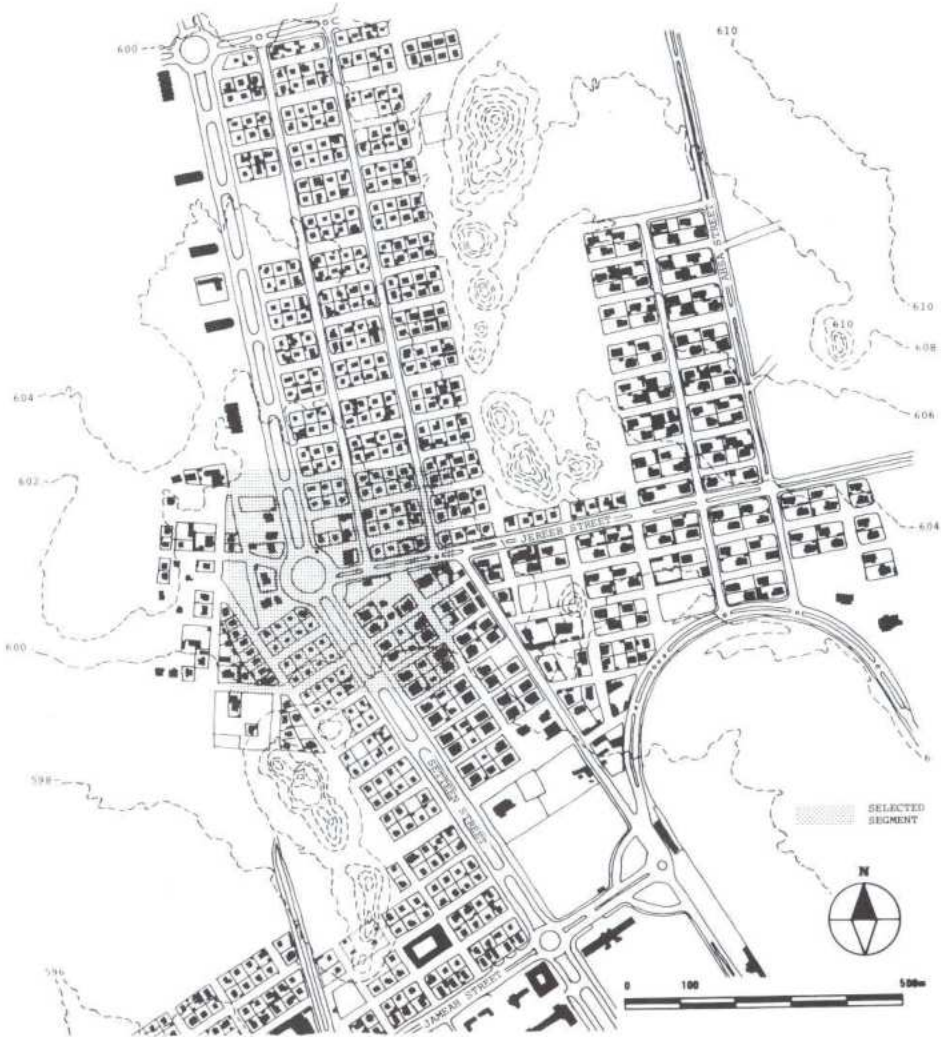


At the behest of King Saud, a 500 acre satellite suburb, al Malaz, was inaugurated four kilometers to the North of the walled city. Extolled as the New Riyadh, the al-Malaz project included large-scale housing development, public buildings such as a municipal hall, a library, fire station, schools, markets and recreation and health facilities. The al Malaz development signaled a departure from the old *laissez-faire* attitude and heralded a new era of government intervention in the housing market as a major supplier, financier and subsidizer. The villas were sold to government officials at long-term loans. The al Malaz planners followed the gridiron network with a hierarchical street network. This network fed residential blocks of 150 by 300 feet which were subdivided into rectangular lots of 25 feet deep with lengths varying from 25, 75, to 110 feet. Due to its complexity and scale, the al Malaz project can be considered as the major attempt to coordinate the allocation of several urban elements in space, with special attention to the overall urban system. As such, unlike the laying of gridiron residential annexes in the Eastern Province's towns, the al Malaz model was characterized by its diversified functional elements which were built to enhance Riyadh's centrality in the nation and boost its administrative capabilities. This intervention was to culminate in the massive housing programmes yet to be introduced in the mid-1970s, with the establishment of the Real Estate Development Fund (REDF). By the end of the 1950s, Riyadh boasted a population of 300,000, and covered an area of about 100 square kilometers as opposed to the original 100-acre 'heart of Arabia' (Figure 44).

### **Urban Reconstruction At The Historical Core**

During the 1950s, the city had its share of King Saud's zeal for reform and he committed himself to the task of remodeling that part of the capital. Increases in population and government ushered unprecedented economic growth in the historical core. Both catapulted demand for consumer goods which caused the expansion of a modern downtown area, and the sorting by location of some economic activities hitherto unknown to the traditional population. Economic growth also resulted in the development of some fairly distinctive residential districts reflecting a socio-spatial stratification of a modern urban society, though with a great deal of spatial intermingling still extant.

The traditional fabric was the first to suffer from rapid change. The historical mud mosque and the large area of houses around it were leveled. On their ground a new larger mosque was built of concrete, with two tall minarets. The old palace of Imam Turki was replaced by a huge complex comprising housing and law courts, offices for the governor or Riyadh and audience chambers for ceremonial occasions. Modern shops were erected lining the streets converging on the new centre and radiating from it. The old, unassuming mud houses were dwarfed by new,



*Figure 44: Al-Malaz was built to house the government's civil employees in Riyadh. The planning of the large-scale development featured a gridiron subdivision and the villa model which were widely copied in subsequent land subdivisions by land owners and municipalities throughout the nation. It was a radical shift from traditional architecture and urban planning.*

*Source: Al-Hathloul, 1981.*

pretentious high-rise buildings. Other mud houses were gradually demolished to make way for vehicular roads, as well as for concrete and masonry buildings.

### **Planning The 'City Of Future': The Introduction Of City Master Plans In The 1970s And 1980s**

The impact of preemptive government decision-making and underwriting of urban development was shown best during the 1970s and the 1980s. The 1970s brought and unprecedented world demand for oil. Oil output virtually doubled between 1970 and 1973. The improvements in the national oil economy was translated into a construction boom that swept Riyadh in particular and the Saudi cities, towns and villages, in general.

Oil wealth has enabled the government to embark upon vigorous national and urban planning schemes aimed at increasing the living standards of the population by all feasible means (higher income, better housing and hygiene, etc.) and by upgrading the built environment for projected future economic prosperity. With more oil revenue channeled into the modernization of the nation Saudi towns grew a fast pace, sectoral planning approach of the past, mainly the laying of land subdivisions according to planning-by-laws measures implemented by cities' municipalities, proved lacking.

Departure from the traditional design standards of the *medina* culminated in the adoption of Doxiadis' City Master Plan in 1973 by the Council of Ministries, the first comprehensive attempt to circumscribe the City's unbridled growth. City Master plans are long-range, multi-phase conceptualizations of towns future growth. They constituted comprehensive land use and infrastructure development plans, projected in tune with vigorous national economic growth schemes. They were archetypical solutions to rapidly expanding cities. All sought to facilitate economic prosperity and social stability through manipulating the spatial system. Along with the housing loans provided through the REDF, Riyadh's new Master Plan institutionalized the grid and indoctrinated the villa as the preferred form of laying new districts by setting rectilinear lot-sizes, and enforcing setback regulations<sup>[10]</sup>. The new Plan was sought to guide development in accordance with the objectives of the central government.

- flexibility, so as to accommodate varying rates of growth;
- a fair distribution of services to all levels of the population;
- a transportation system based on the use of private vehicles<sup>[11]</sup>.

The above main objectives were translated into: (1) the adoption of the linear



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form for the City toward the North with a Central Business Area, a spine extending North-South; (2) the redesigning of certain areas within the City as "self-contained" units, that is with their own service cores with access to medium level service centres and the CBD; (3) the charting of a new road system with a hierarchy of street and pedestrian precincts. The Plan included the detailed design of individual Action Area Plans, those deemed potential for development, covering 11.5 square kilometers, in an effort to relieve the City's centre.

The "Doxiadization" of Riyadh amounted to the superimposition of western-rationalism on a traditionally based society, which hitherto valued social ties over economic privatism. The problematic practice of zoning, that was conceived in the West as a tool of exclusion, was generalized to the Saudi city, a place where separation of people by class was previously unknown. Under the pressure of urbanization and economic growth, any plan was better than no plan; waiting meant anarchy. While the Doxiadis Plan was conceived for projected growth until the year 2,000, the demand for land for construction was soon to surpass the Plan's demarcated boundaries. It was not that the area in the Plan was fully developed. To the contrary, a substantial proportion of area remained undeveloped, "white land", as owners aspired for a future upsurge in land prices to reap a high return on their untaxed properties (Figure 45). This pattern of increased state intervention in changing urban forms of cities continued as the "Westernization" of the Saudi traditional built environment was deemed as synonymous with modernization and prosperity.

### *Case Study II: Arar: An Industrial Urban Form*

As we saw in Riyadh's case, the major cities were the first to enjoy the churns of the new wealth. However, the other towns were not behind. *Bedouins* and town ruralities flocked to the emerging oil towns seeking better job opportunities and public services. Arar offers a unique case of urban development *ab initio* in which a new city originated from naught in response to modern international political economic exigencies. It epitomizes the process of restructuring the traditional national urban system in response to international economic tides. By 1973, Arar boasted a population of 14,000 with a flourishing division of labor involved in the expanding job market offered by state agencies and supporting services, specifically education and health. Arar's prosperity was enhanced when the town was nominated as the administrative regional centre serving the Northern Frontiers' region, then populated by an estimated 325,000 inhabitants.



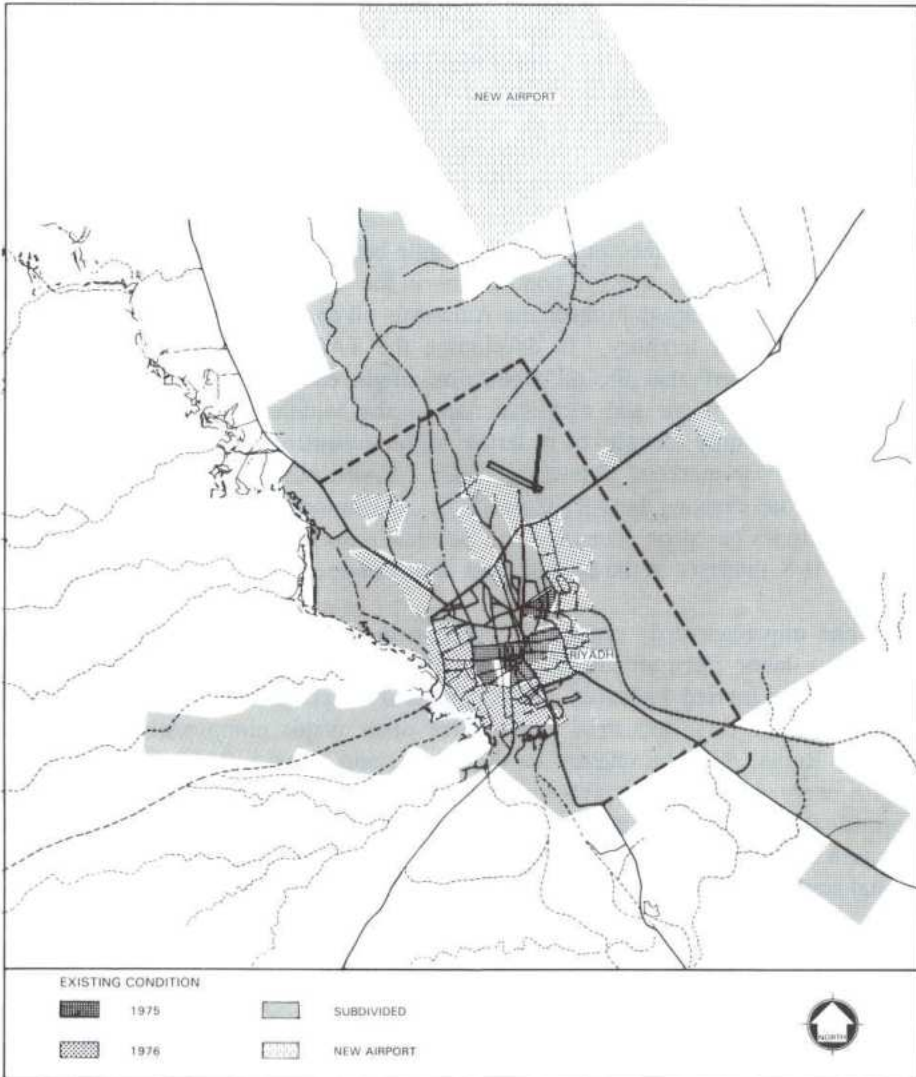


Figure 45: Riyadh 1976. The 1970s government modernization programs fueled a frenzied speculation in the land market. The process of land subdivision proceeded beyond the 300 square kilometers denoting Doxiadis Plan of 1971 (dotted line denotes Doxiadis Plan).

Source: SCET International / SEDES, 1977.

### **International Economics Spur Modern Urban Growth**

Economically, Arar's birth and early growth were due to the construction of the Trans-Arabian Pipe Lines (TAPLINE), a venture which was completed in December, 1950. The construction of the pipeline was a direct result of connecting the modern Saudi economy, based on oil production, to the international market system. Ironically, Arar's birth was exogenously spurred by the complex international political, economic and military epochs during and in the wake of World War II, it was part of the competitive struggle between British and U.S. oil companies during the 1940s over oil concessions in the Gulf region. The scheme of the TAPLINE largely meant to meet the American oil companies' goals, while working on Saudi Arabian territory. In developing the TAPLINE project, it "had hardly been contemplated that the oil production might encourage and bring about the economic development and reconstruction of the Middle East itself". Rather, the Saudi "oil was only thought of in terms of the reconstruction of Western Europe and its post-war markets" (Mejcher, 1982). TAPLINE idea was originally conceived on the drawing boards of the U.S. government's foreign policy staff and military circles based on economic and political criteria contributing to the (realization of) U.S. interests in the Middle East and Europe.

The unprecedented venture of building the TAPLINE project required an enormous labor force amounting to 16,000 workers at its peak. The early structures of Arar housed *bedouins* seeking jobs and benefits in the industrial camp. In addition to the Arar industrial camp, three other major pump stations at Al Qai-somah, Rafha, 248 kilometers to the South, and Turayf, 238 kilometers to the North were added. The new industrial compounds serving the pump stations formed the "Tapline urban corridor" upon which future growth ensued. At the location of each pump station, an industrial compound was built to house a professional staff and support facilities to maintain these pump stations (Figure 46).

In line with the agreement between the Saudi government and ARAMCO, the oil company built schools, health clinics, warehouses, airfields and some public-oriented facilities. Moreover, the TAPLINE, at the request of the government, constructed a tarmac road paralleling the pipeline, connecting the various growth poles dotting the TAPLINE corridor, a project which was completed by the mid-1960s. (OPEC, 1983) Although the road was essentially meant to serve the trans-saharan pipeline and its industrial compounds, it generated a substantial volume of traffic altering the regional urban network and creating considerable commercial activity of regional, national, and international significance. The combined effects of creating health services, water, educational and transport facilities have since bestowed the TAPLINE corridor's towns with large numbers of immigrants.

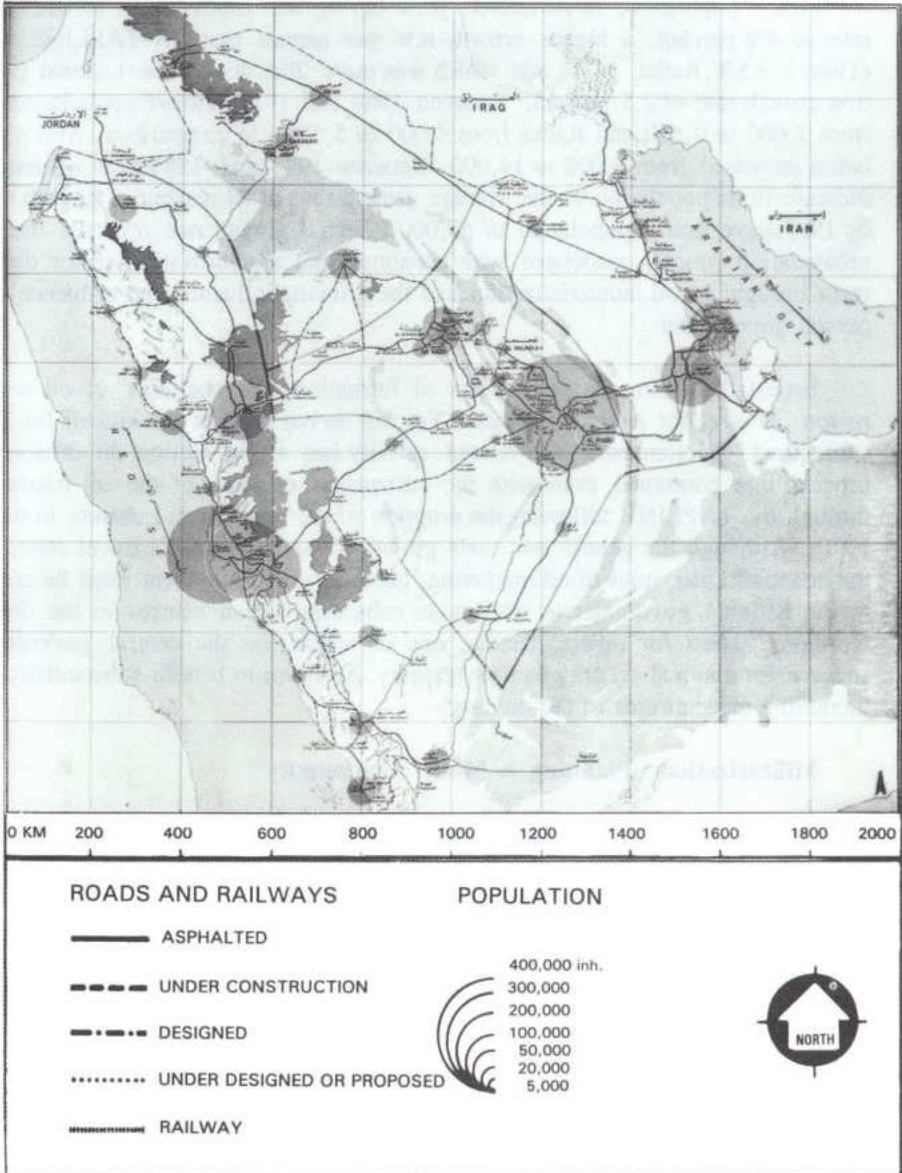


Figure 46: Map of Saudi Arabia Showing Major Cities and Towns, Including Arar.

Source: Doxiadis, Arar, Present Conditions, 1975



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Arar's population, in particular, grew during the 1960s at an annual growth rate of 4.6 percent, a higher growth rate per annum than its TAPLINE sisters (Turayf, 3.5%, Rafha, 3.7) a rate which was more than double the national population growth rate of 2.5 percent. Between 1962 and 1973, Turayf's population grew from 7,000 to 9,500 and Rafha from 4,000 to 5,500. In comparison, Arar's population increased from 9,000 to 14,000. Between 1973 and 1986 Arar witnessed an increase in its population at the average growth rate of 24 percent, a growth which, by 1987, gave Arar a population of 65,000. Such a growth rate reflected the acute urbanization process associated with economic and administrative sector development brought by oil industrialization and the growing influence and affluence of the central government.

Especially during its early years of formation, the transport of oil was the *raison de etre* for Arar's existence. Yet, oil served only as the kickoff for Arar's subsequent development. Oil-related activity has set in motion an urbanization process that continued even with the suspension of most of the oil transported through the TAPLINE following the eruption of the civil war in Lebanon in the mid 1970s. Although the genesis and early growth of the TAPLINE's towns reposed on the economic principles of oil marketing, later urban development must be credited to the national government's interest in enhancing urban centres in the desolate Northern region for several factors, one of which was the central government's concern for national security and sovereignty. Arar was to benefit substantially from increasing expenditures of the military.

### **Militarization: Planning A Model Community**

The vitality of the Northern region to the national security of Saudi Arabia can only be understood in light of the international political developments that swept the Middle East following the fall of the Ottoman Empire and the subsequent colonialization of its territories by European powers (1910s-1960s). Although Saudi Arabia was formed without passing through *de facto* colonialism, the demarcation of its borders took place when neighboring Arab territories were under colonial administration.

Owing to the precarious geopolitics of the Kingdom's northern borderline, Arar was chosen by the central state as the northern base for several military and security force communities. By 1973, two of Arar's five residential districts were distributed to National Guard staff both occupied a substantial portion of the city's area. Moreover, the Ministry of Defense, which oversees and runs the only national civilian airline, Saudia, also maintains Arar's airport. In 1976, the government authorized the construction of the provincial airport 11 kilometers to the



south of Arar.

In its effort to attract nationals to the area, the Ministry of Interior provided wholly designed and built model communities for its Internal Security Forces (ISF), thanks to the rising oil revenues. During the 1970s, the Ministry of Interior contracted international architects and contractors to construct 4,672 housing units in fully serviced and well-planned communities in 16 Saudi cities.

In November, 1980, the Ministry of Interior commenced the five year large-scale community development. Arar received 453 units on a location which added 40 hectares to the city's area (Figure 47). The 2,700 residents "model" community included a large congregational mosque, 2 clubs, four schools, a recreation centre with an auditorium, shops and a health centre. In contrast to Arar's other scattered, half-built land subdivisions, which is marked by a disjointed planning process largely due to lax municipal controls and uncoordinated sanctioning of land subdivisions, the ISF is uniquely designed and professionally built by international firms aided by young Saudi architects. In contrast to Arar's layout, the ISF development emphasized a meandering loop feeding the major residential zones, clustered around the central service area where the Friday mosque, shops, the clubs were located. Schools were scattered around the site in calculated proportions according to the age and number of students.

From an industrial complex on the TAPLINE oil corridor, Arar evolved as a regional urban centre serving political, economic and military functions as well as housing a population of 108,055 inhabitants in 1992. The birth of Arar in 1950 represents the restructuring of the modern national urban network according to the emerging oil economy and under the auspices of the national-state. As the significance of the TAPLINE project to the national economy diminished in the mid 1970s, the political importance of the town emerged as the major force behind Arar's accelerated urban growth. Originally built for pure economic reasons, that is, to meet the logistics of oil transportation, Arar's subsequent growth reflected the national government's political goals, viz as a military outpost and an administrative service centre for one of the Kingdom's major regions.

### ***Case Study III: Huraimla: An Agrarian Urban Form***

The unification of Saudi Arabia under king Abdul-Aziz brought a new era of far-flung security, growth and prosperity. The consolidation of power in the form of a central state meant the cessation of feuding towns' populations engaging in an ongoing struggle over the meager resources offered by the desert environment.

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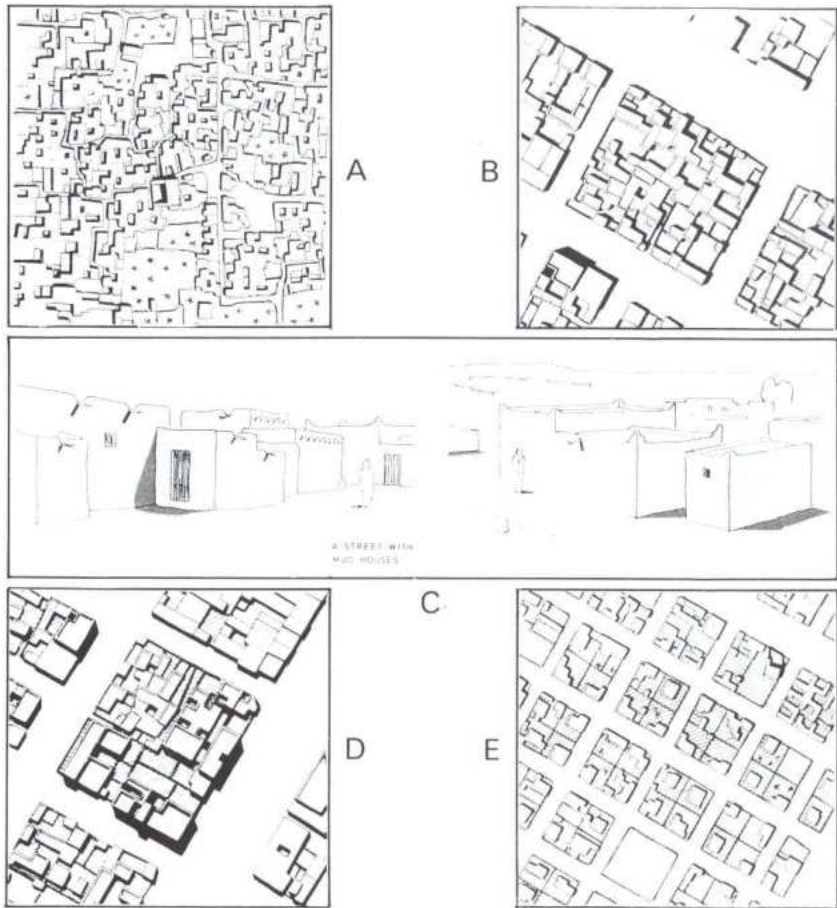


Figure 47: The Tapline planners utilized a gridiron pattern to subdivide the Arab community, that is the Tapline Houses, instead of attempting to forge a socially pertinent physical plan that adheres to the local culture and physical context. (A) represents a layout of typical traditional built form in northern Saudi Arabia. Arar's inhabitants built mud houses upon their arrival to Arar during the 1960s (B&C), and then substituted the mud houses with the modified version, post-mud house on the same lot, i.e. forming one of the ah'yaa ashshaa'biyah communities (D). The Tapline Houses (E) were planned and built by the Tapline company using modern building materials.

Source: Doxiadis, Arar, Present Conditions, 1974.

The establishment of a modern state ushered in political stability and, due to the discovery of oil in enormous quantities, economic support under the aegis of the central power focusing the population's energies toward growth, ostensibly starting in, and reflected upon the physical environment.

Huraimla is an old agricultural settlement, one of the many agrarian constellations dotting the Saudi Najdi region. Its morphology and socio-economic system closely resembled and shared the overall attributes of Najdi's pre-industrial settlements. Huraimla offers an interesting case study in which an agricultural-based subsistence economy town gave way to a service economy (by 1982, 57% of Huraimla's working force was employed in the tertiary sector, of which the government services, by 1989, accounted for 55% of the town's labor force). Two particular phases can be discerned in Huraimla's urban process which followed the emergence of the national state in 1932. First, as the town underwent slow, yet steady economic development, Huraimla grew following a modified vernacular architecture, using new design styles and imported building materials. This pattern dominated in the newly built structures until 1965.

Second, with the multiplying of central government's wealth, Huraimla's population increasingly aspired toward the modern *modus vivendi*: the wholesale adoption of modern conveniences such as the car, electricity, and a massive array of consumer goods, made possible by the government's modernization programmes. During this second phase, Huraimla entered a new era of "planned" growth: marked by centrally-ordained growth controls, eclectic architecture and the rectilinear layout of lots and circulation space. Because urban planning as practiced by municipal authorities is based on instructions by the national government, a process which has been essentially applied equally to most of today's Saudi settlements, Huraimla's new growth would inevitably resemble other suburban development in other Saudi settlements: grid-patterned sprawl juxtaposed to dilapidated vernacular built forms.<sup>[12]</sup>

### The Introduction Of Municipality

The creation of the municipality in 1965 could be considered as the benchmark for "modern" urban planning in Huraimla. The inauguration of the *imarah* (principality), the establishment of a police power, public schools, and municipality (*baladyyah*), have been an embodiment of the increasing role of the central state in the local affairs, including the management of the urban development process. As a government institution, the *baladyyah* derives its support and instruction from the Ministry for Municipalities and Rural Affairs in Riyadh. This means that decisions concerning local urban growth and management must first be sanctioned by the



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central agency. Simultaneously, the *baladyyah* also implements numerous circulars, decrees and ordinances that are priori ratified and codified by the Council of Ministers. It also meant that the customary building practices which characterized the traditional building processes are subjected to nationally adopted municipal codes. Nevertheless, for the local population, the establishment of the municipality has been perceived as synonymous with "modernization" and "civilization".

The Municipality has since led the march to a new growth suited to the exigencies of the modern age. The combined impact of widespread use of the automobile, the increasing population, rising living standards, and the acculturation brought about by modernization, all justified seemingly radical intervention by the fledgling municipal staff.

Starting with the demolishing of the Al-Jama'ah historical wall and its gates, the municipality spearheaded the sudden departure from the vernacular standards of urban design and building processes which forged the traditional built environment of Huraimla. Inside the traditional fabric, the municipality embarked upon a programme of modernizing the "archaic" fabric, implementing surgical operations that disemboweled the compact walled settlement. Since its creation in 1968, in its efforts to "modernize" the ramshackle quarters, the municipality bulldozed a significant proportion of the meandering alleys of Huraimla to allow for the construction of new buildings, streets and parking space (Figure 48). Old buildings that lay in the way of the automobile were mercilessly demolished to allow for wider, straight streets suited for the car.

If anything has marked the municipality's enthusiasm for modernity then it was its undisputed and remarkably negative attitude toward traditional architectural heritage. This apathy could be attributed to the substantial number of foreign-educated technical staff in the municipal staff, most of whom were foreigners, hence less attentive to local heritage. The anti-vernacular attitude must also be blamed indirectly on the calculated attempts by the state to coax the traditional society into modernization (Fedan, 1983).

### **"New Huraimla"**

Vigorous government spending aimed at development in the 1970s ushered in a flurry of construction which rendered the few contiguous subdivisions of the early 1970s insufficient to meet the projected needs of public, social services and residential land. For example, the number of construction permits issued by the municipality increased dramatically from 16 permits per year in 1971 to 48 permits per year in 1974, and rose steadily to 162 in 1978. Faced with the prospect of skyrocketing



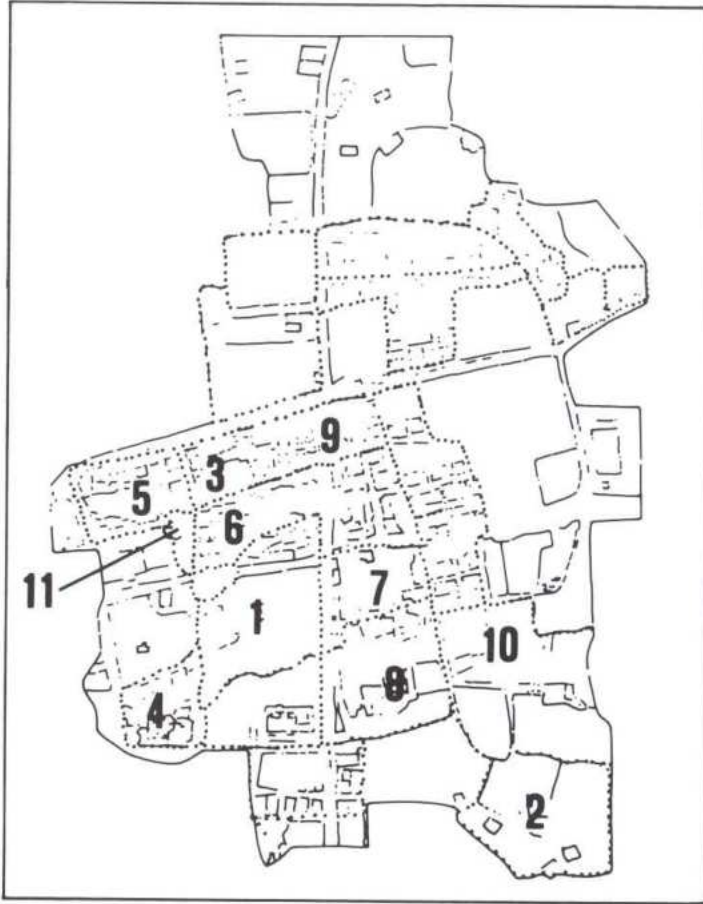
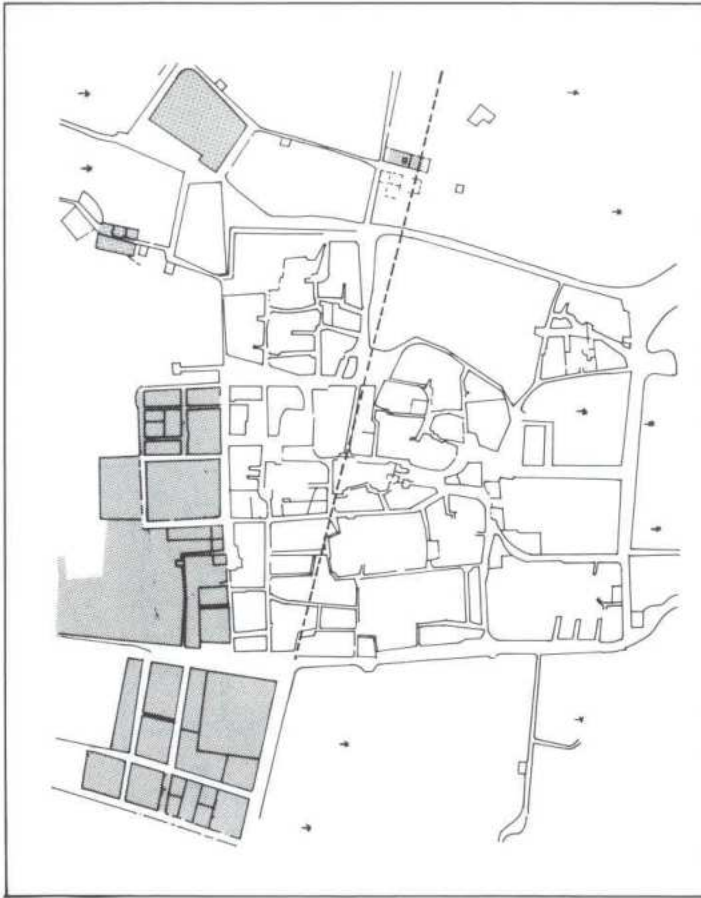


Figure 48a: Map shows the evolution of Old Huraimla's built form. Area (1) represented Al-Igdah quarter and (2) the Al-Hisian quarter, both developed before 1050H. (c. 1630-1680A.D.) Numailan (3) and Garrashah (14) and (15) Al-Henaini were developed between 1050 and 1150H. Mowafiq (6), Al-Wositah (7) Ashshahwani (8), Ghusaibah (9), Suq Al-Misha'alah (10) and Al-Malga (11) quarters were built during the period 1150-1300H. (c. 1750-1900A.D.) Outside the wall, during the 1960s and 1970s, new neighborhoods grew rapidly (numbered 12-21) to the north, east and south of the wall.

Source: Esa, 1986.

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*Figure 48b: New neighborhoods sprouted to the north and east of Old Huraimla (dotted line represents the path of the main road which was constructed in 1973).*

*Source: Al-Tua'is, 1979.*

land prices in the limited area North of the town, due to high demand for land, the municipal staff frantically looked westward, across the wadis and farms besieging the old town for new land to develop. Despite opposition by residents who invested in Northern areas, the municipality's director spearheaded the effort to win the approval of the central government to subdivide the Al-Hazm area, two kilometers west of the placid old town, which offered a vast expanse of land, two kilometers west of the old town (MOMRA, 1967). The fact that the Al-Hazm lay in an area

that was government owned served as a stimulating factor to start a new unconstrained suburban development at standards which matched those followed by the Kingdom's leading cities.

In 1977, the municipality began the free land rush in Al-Hazm area, or "New Huraimla". The first two land subdivisions which were approved for distribution of 1,196 residential lots, readily covered an area of 144 hectares. By 1985, the Al-Hazm development comprised seven new subdivisions comprising 2,600 residential lots occupying an area of 3.08 square kilometers. The lots took the rectilinear form with dimensions of 20-by-20 for lower income groups and 30-by-30 meters for *minah* grants (land obtained through royal grant) and the setback villa was the official residential pattern for single housing units. By 1987, the total platted area of Al-Hazm amounted to 3.85 square kilometers, as opposed to the old village non-farm, developed area of 0.84 square kilometers (including the 0.24 square kilometers area which laid within the old, walled town).

The demand for more *minah* (gifts by the King in the form of plots) free lots continued uninterrupted, by both residents and other Huraimlawis who lived outside Huraimla. The free land programme, although giving priority to lower income groups and town residents, was also expanded to outsiders who wished to apply for land in Huraimla<sup>[13]</sup> because of Huraimla's unique terrain, which limited the prospect of conterminous, uninterrupted growth with the old town, and due to the dramatic economic developments since the 1970s, detached suburban development ensued which resulted in a bi-polar urban form. Al-Hazm comprises the modern, planned, services part of the town, while the old, compact area is the old town. As such, and to some extent, Al-Hazm can be considered as an example of a wholly planned community more than a suburb.

## Major Attributes Of Contemporary Urban Forms

Due to the dominant role of the state in urban growth process and the massive allocation of oil revenues in modernizing the society, Saudi settlements evolved exhibiting a similar urban pattern, character and landscape: grid-patterned, low-rise and partially built, land subdivisions besiege traditional nuclei. Although largely modernized and distinctively westernized technologically, the contemporary urban form has also been sparse and blind to cultural values and physical context. Due to the new centralized control, spatial stratification in the modern metropolis is no longer endogamous, that is chiefly based on family, tribe or place of origin criteria, a factor which shaped the composition of traditional settlements' quarters.

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Rather, access to living in modern neighborhoods is economic-based on the ability to pay, and, in the case of REDF housing loans and land distribution by the state, to secure a loan. The physical development of contemporary Saudi urban forms can be outlined as follows. First, around the traditional compact form, a ring of "traditional suburban" development took place outside the wall and abutting it. This "traditional suburban" ring retained the very characteristics of the traditional urban processes, however, with little modifications to allow for the introduction of the automobile, although a tendency to build on a large scale also marked the early phase. Second, with the improving national income, the trickle of urban migration soon became a flood as the national government diverted oil revenues to the development of various settlements, a process which altered the spatial map of the nation.

Consequently, new communities, *ah'iyaa ashsha'abiyah*, sprouted, adopting new technological improvements. The traditional mud houses, comprising irregularly-shaped indoor spaces clustered around a courtyard, were modified to the so-called "Arab" houses which had larger openings and was equipped with electrical and sanitary improvements reflecting the rising living standards of the population. However, the development during this transitional, intermediate phase, given the developmental stage of the government and the society, was too frantic to permit adequate control. This phase also included the proliferation of *bedouin* camps and shanty towns. Third, by the 1950s, the villa, a freestanding and outward-facing housing unit, was adopted by the royalty and the upper class. It symbolized prestige and status. At the same time, another basically new form, the rental apartment complex, began to line the major roads. The complexes had been introduced to house the increasing expatriate population.

The 1960s witnessed the spread of the villa to the expanding middle-class, a group which grew because of government employment and spending. The 1970s government subventions and suburban-oriented housing programmes fueled suburbanization at an unprecedented tempo. Finally, the suburbanization of the Saudi city peaked in the 1980s when the distribution of free land allowed limited-income groups to reach out for their share of the generous pro-sprawl housing subsidies. Movement to the suburbs became attainable among the lower-income population. In addition, with the increase of automobile ownership, the city's periphery became accessible to families of modest means. By the late 1980s, the limited-income suburbs had leapfrogged across the elegant boulevards, while the REDF-subsidized housing units expanded beyond municipally-serviced areas. Modernized, sanitized urban forms - fancy residential suburbs, megalomaniac government projects, commercial malls, glass and marble-wrapped high-rise buildings, and freeways - bestowed an image of progress.



## Comparative Analysis Of Traditional And Contemporary Urban Forms

Since the promulgation of the new nation-state in 1932, new modes of political control, urban design and planning, land tenure and distribution policies, home ownership, and infrastructure provisions have emerged under the auspices of the central state. Table 43, presents a matrix outlining the major cultural attributes in both traditional built environments, and the ones in the modern era. Modernization programmes, coupled with increasing technology, and the expansion of bureaucratic control have caused the demise of traditional urban attributes which forged traditional built forms, that is the *medina*. The consolidation of the various regions' "town-states" which constitute today's Saudi Arabia has focused the dispersed populations' energies into one geopolitical unit, that is the nation-state. Nationalism, as with technology itself, has come to substitute, in part, the traditional cultural values and functions, operating in effect as a secular force (e.g. rational decision making and technical urban planning) and as a key integrative mechanism in modern Saudi society. The State has supplanted religious legislation as the major force in shaping urban forms.

### Envisioning The Pluralistic City

The national development process has given particular attention to the profound influence and direct input of the Saudi government on the departure from traditional building processes and the wholesale adoption of westernized, modernized urban forms. It has also addressed urban planning as one component of the government's whole process of transformation toward modernizing the society. Due to its absolute *de facto* power and control of the oil resource, the Saudi government has pre-empted the decision-making process at the national level, including urban planning activity and urban policy making.

The infusion of settlements with prescriptive urban legislation and planning models, the undertaking of infrastructure developments and social services, the application of standardized housing programmes, land distribution patterns, and the construction of government buildings of similar architecture design (schools, mosques, clinics, police and fire stations, post offices, etc.), all have facilitated the production of modern built forms which, while originated from distinctive urban patterns, grew to resemble each other despite their geographic setting, urban economies or genesis. Consequently, the diversified vernacular architecture and forms of the various regions of the Kingdom have dissolved into one whole: urban sprawl based on the grid system and the villa model, largely due to the REDF generous housing loans and the free land policies.

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Table 43  
Matrix of Cultural Urban Attributes

CULTURAL ATTRIBUTES	TRADITIONAL BUILT FORMS	CONTEMPORARY BUILT FORMS
<b>Government Control</b>	<ul style="list-style-type: none"> <li>. Princedoms, Tribal Sheikdoms, Decentralized</li> <li>[1] <b>Inter-Settlements:</b> <ul style="list-style-type: none"> <li>. Dispersed political nodes of power</li> <li>. Minimum interaction with a political center</li> </ul> </li> <li>[2] <b>Intra-Settlement:</b> <ul style="list-style-type: none"> <li>. Traditional authority</li> <li>. Intricate system based on a hierarchy customary decision-making forms of participation</li> <li>. Local administration of residential quarters</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>. Monarchy, Nationalism, Centralized</li> <li>[1] <b>Inter-Settlements:</b> <ul style="list-style-type: none"> <li>. Hierarchical organization of centrally administered regions, sub-regions and settlements</li> </ul> </li> <li>[2] <b>Intra-Settlements:</b> <ul style="list-style-type: none"> <li>. The bureaucratic Amir relies on and coordinates a network of specialized state agencies such as the municipality, police, schools, health, etc.</li> <li>. Traditional (symbolic) viceroys</li> </ul> </li> </ul>
<b>Economy</b>	<ul style="list-style-type: none"> <li>. Subsistence agriculture and pastoral economy</li> <li>. Atomistic markets</li> <li>. Tax-based income</li> <li>. Informal sector</li> </ul>	<ul style="list-style-type: none"> <li>. Oil-based national economy, Nationally integrated,</li> <li>. Diversified urban economies, highly dependent on oil revenues through government allocation mechanisms, and employment</li> <li>. Formal sector</li> </ul>
<b>Urban Planning and Design</b>	<ul style="list-style-type: none"> <li>. Local initiative</li> <li>. Spontaneous growth,</li> <li>. Governed by social norms (as opposed to technical)</li> <li>. Environmentally responsive</li> <li>. Macroclimate</li> </ul>	<ul style="list-style-type: none"> <li>. Excessively and central state activity</li> <li>. Top-down</li> <li>. Technical (Secular)</li> <li>. Western-inspired</li> <li>. Microclimate</li> </ul>
<b>Land Ownership and Distribution</b>	<ul style="list-style-type: none"> <li>. Land was a social resource,</li> <li>. Post development tenure,</li> <li>. Irregular lots,</li> <li>. Islamic inheritance law allows for divisibility of property</li> <li>. Shufah helped forge kinship-based quarters</li> <li>. Buildings determined lot shape, hence town neighborhoods forms.</li> </ul>	<ul style="list-style-type: none"> <li>. Land as commodity</li> <li>. Large-scale acquisition of land and subdivision,</li> <li>. Indivisibility of land</li> <li>. Conversion of raw land based on actual need and market speculation</li> </ul>
<b>Home Ownership</b>	<ul style="list-style-type: none"> <li>. Cooperatively financed and Self-Help,</li> <li>. Mostly local building materials,</li> <li>. Extended family</li> </ul>	<ul style="list-style-type: none"> <li>. Credit: Private Institution</li> <li>. Credit: State subsidized</li> <li>. Largely imported building materials,</li> <li>. Nuclear family</li> </ul>
<b>Public Infrastructure</b>	<ul style="list-style-type: none"> <li>. Residents maintained neighborhoods, Waqf supported public services</li> <li>. Minimum intervention by authorities in local affairs</li> </ul>	<ul style="list-style-type: none"> <li>. Government provided</li> </ul>

The uncoordinated implementation of numerous urban growth-related decrees by the central government and the lack of adequate planning expertise stood as the major obstacle to the realization of otherwise progressive pro-growth policies. The indulgence in Western suburbanization conveyed a sense of prosperity which cloaked the increasing alienation of the desert physical environment and masked the enormous social and economic cost of the bulging sprawl.

What can be done to restore desirable traditional urban attributes as well as authenticity and to promote economic independence while acknowledging modern time exigencies (i.e. the political economic structure under the modern nation-state and technology) is a crucial and challenging question which needs to be addressed in the closing part of this Chapter. In his analysis of modern housing development in Saudi Arabia, Peter Rowe (1989) characterizes the contemporary urban landscape as "distinctly modern and Western". Yet the modernization of the building environment in Saudi Arabia has also amounted to rigid, cumbersome urban sprawl out of sync with the culture and at odds with the prevailing sterile desert ecosystem.

One remedy is to delegate substantial power to local communities which will help foster indigenous political personality and, thus on the urban level, infuse pluralism in urban planning and design. In the realm of urban design, an intricate system of organizing open circulation and built spaces should adhere to formulas that both meet and guarantee neighbors' needs for privacy and mollify the harsh desert environment of the Kingdom. This could be attained, for example, by gradually empowering local municipalities to form local legal bodies with elected representatives.

Thus, community residents could propose creative measures reflecting their needs in their immediate built environment as opposed to the existing impersonal, spaceless and standardized regulations of the central bureaucracy. Within the new municipal government, a greater flexibility would be granted to local districts to establish procedures by which, for example, land allocation and other forms of subventions are granted on an actual needs basis. For example, absenteeism and lax land development controls are at the centre of the present urban sprawl. This results in costly infrastructure and an ineffectual supply of public services at the city scale. Land distribution policies can be controlled by local communities and delivered to those able to utilize them upon actual need.

By increasing local participation it is hoped that locally determined measures would help relieve the vexing problem of scattered development characteristic of Saudi modern urban development. Finally, municipal governments may be encouraged to compete in attracting central government funds on a feasibility basis which,



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in the long-run, aims at creating economically solvent urban economies. Ultimately, towns could economize urban development.

The hope for the political realm is that diverse semi-independent patches will result in a quilt of personalized urban communities, as opposed to the prevalent hard, rigid and singular physical systems. Economically, the government's overburdened commitment to finance local, spread-out urban forms will presumably be lessened by local supervision of the distribution of land to eligible recipients and allocation of public services and utilities to the population. Bureaucratically, the process of reestablishing local participation in the decision-making process ostensibly eases the cumbersome and bloating functions of the central administrative system.

## **Conclusions**

The promulgation of the new nation-state has ushered in a new era of peace and security to the Kingdom's settlements. The nation-state in its efforts to exploit the massive oil resources has effectively contributed to the urbanization of the nation through the redistribution of oil income to all regions, by creating jobs and investment in the built environment. Consequently, the Saudi city grew under nation-state protection heavily dependent on its sponsorship. In turn, the decision-making process has become the prerogative of the central government, hence eclipsing traditional forms of local urban control.

The shift to systematic and technically rational urban intervention and the adoption of legislative powers over the lumpen bourgeois of the settlements is a turning point in Saudi Arabia's urbanization history. Despite the largely centralized bureaucracy, implementation of ambitious urban policies and planning initiatives has not met popular expectations and has come at a great expense. Implementation suffered from uncoordinated efforts of various central agencies and from cumbersome redtape. Often, exceptional cases defied implementation of otherwise beneficial decisions. As the central government assumed its responsibilities to spearhead the modernization of the traditional society at a rapid pace, central government apparatus developed at the expense of local, political and economic structures of the Kingdom's towns and regions. Local participation in urban government has been substituted for an ever expanding bureaucracy that solely relies on central government finance. Central planning and other urban-related legislation and policies have been generalized to most localities with little, if any, distinction to local circumstances. Physically, Saudi settlements have suffered from acute sprawl and lack social personality.



Localism, that is, the legal participation of local residents in the administration of their settlements, is a promising venue to the current problem of inefficient sprawl and to encourage solvent urban economies. Localism involves gradual delegation of power and financial responsibilities to local *emirates* and municipalities which in turn are expected to assume a major role in competing for central government funds based on sound feasibility studies and socially desirable criteria, while allowing the central government to retain the final say in issues that conflict with fundamental Islamic rulings and those threatening national security and sovereignty. It is hoped by such decentralization that local control will complement the desired national planning goals and help in attaining economically efficient and environmentally pertinent urban built forms.

## Notes

- [1] By encouraging *waqf* (charity geared toward the benefit of the public) Islam helped socialize private property.
- [2] This was mainly in most settlements of pre-Saudi Arabia. The use of coined money increased in 1924 when under King Abdul-Aziz, local money was produced (Al-Washmi).
- [3] I emphasize here that my discussion of cultural attributes underlying urban processes may not necessarily be taken as an argument for the application of traditional principles - as they are - to the modern Saudi city. A clear understanding of traditional principles must carefully precede a gradual application of pertinent values. They must be tested in light of social desirability and political visibility and their compatibility with the modern technology.
- [4] Prophet Mohammed's teachings were so comprehensive that they dealt with the construction of buildings. For example, he stated, "God did not order us to cover stone or clay". Also, Prophet Mohammed prohibited a person from sleeping on a unscreened roof or terrace. A commitment to follow the Prophet's guidance would necessarily imply adding screens to houses roofs, an element which affects facades' configuration.
- [5] In the Holy Qur'an, Allah says, "Say to the believers that they should lower their gaze and guard their modesty, that will make for greater purity for them, and God is well acquainted with all that they do".(24:30) Also, Prophet Mohammed was quoted as saying, "He who look into a house without the occupants' permission, and they puncture his eye, will have not right to demand a

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fine or ask for punishment". He also said, "On the Day of Resurrection lead will be poured in the ears of anyone who eavesdrops on other who dislike him". (Source: Hakim, 1986: 151).

- [6] Prophet Mohammed's rulings on the conditions of ownership is binding to most schools of jurisprudence which serve as the basis of the Islamic legal system. He was quoted as saying, "Somebody who gives life to a dead [undeveloped] land can claim it, and no tyrant has rights to it". This Hadeeth (saying) was narrated by Abu Dawood via Bin Azzubair, (Hakim, 1986: 149). According to Akbar (1988: 26-32), most of Islam's school of jurisprudence endorse the revival of dead land outside urban area without state consent. However, one of the four schools qualifies this rule: the appropriation of undeveloped land that lies within urbanized area required permission of the state. The state does not have the right to land ownership unless parcels are given to it voluntarily by owners.
- [7] This construction period was to built a 3,000 square cubit house (1 meter = 2.4 cubits). Small houses' area averaged 90 square meters (500 square cubits), and soil used to produce mud bricks were taken from the foundations' soil, (see Washmi).
- [8] According to Islamic teachings, water is a public good. Prophet Mohammed said, "Muslims are partners in three things: water, pasture and fire". Narrated by the companion Abu Hurairah. Translated in Hakim (1986), 148.
- [9] The explicit recognition of the individual responsibility toward his/her neighbors is said to have a great impact on traditional Muslim built forms (Akbar, 1988). Prophet Mohammed warned against indifference to neighbors, let alone harming them. Also, Islamic teachings strongly called for cleanliness as an aspect of faith. Prophet Mohammed was quoted as saying, "Keep yourselves clean as Islam is clean", and "God be praised is good and He loves goodness, [He is] clean and He loves cleanliness, perfect and He loves perfect, so clean your '*fina*'. Fina refers to an open space such as a courtyard or the immediate space outside a house. It was also narrated that the Prophet said, "Avoid the three accursed exerting in the streams, in thoroughfares and in the shade. This Hadeeth was narrated by Abu Dawood via Ma'adh, who heard it from Mohammed.
- [10] In Riyadh the villa type comprises 37.9% of the residential stock. Source: High Commission for the Development of Riyadh. *Land Use Survey: Summary Report*. (Riyadh: Al Shathry Consulting Engineering, 1987).

However, the proportion of mud houses shrunk from 45% in 1968 to 7.5% by 1986. Apartment units comprise 39% of the housing stock.

- [11] SECT International/SEDES. Arriyadh: Hadirah Damllish (Riyadh: International Metropolis, c. 1977), 14.
- [12] Not all settlements received equal funding by the central government. Settlements were variably bestowed due to many factors such as the settlements strategic role, based on economic and/or sociopolitical criteria. For example, the allocation in modernizing the nation's military has bestowed tremendous funds on some Saudi towns and cities. Cities of Hafar Al Batin, Khamis Mushayt and Tabuk have been transformed into bustling military bases. The Holy cities of Makkah and Madinah received tremendous sums of capital from the state due to their religious status.

Saudi citizens living in villages and towns were affected by urban strides which they confronted during their visits to major cities such as Riyadh, where the economically better off population had adopted architectural elements in the design of housing units and other buildings. The interaction between the country's population and the government's intensive pro-modernization propaganda through the government-controlled press, and government-owned television and radio broadcast systems have expedited the wholesale adoption of the mostly Western architecture (see for example Faddan, 1983).

- [13] See for example Royal Decree No. 7,800 dated 10/07/1380 H (c 1960), which stipulates a royal permission for granting land; No. 11003 dated 08/05/86 H (c. 1968), no 437 dated 01/06/1398 H (c. 1978), and No. 59 dated 19/04/1401 (c. 1981) concerning criteria for lower income groups (LIG) to qualify for free land. Some of the conditions attached to an LIG's grant that he or she is 18 years or older, must not own land or obtain a REDF loan, among others. However, citizens can also request a royal grant by applying for land without the necessary LIG status. The King is entitled to grant land to individuals under certain rules. In this case, a citizen may be granted land in any locality in the nation, depending on the availability of land that is undergoing distribution by a government agency, i.e. the municipality.





# 11 Urban Planning Experiences

Edward Lynch

Urban physical planning universally suffers from an inadequate realization that land-use patterns for any area or region result from dynamic and constantly changing economic and social forces, which are continuously affected by public and private initiatives. A fundamental responsibility of the physical planner is to achieve the deepest, most comprehensive understanding of the strength, direction, character, and consequences of the economic and social forces at work in a particular geographic area, so that physical development decisions are timely, supportive of positive private sector initiatives, and do not waste land use or environmental resources. When plans are too detailed, unrealistic, and rigid, they tend to restrict development and become counter-productive.

Urban physical planning in developing economies with strong central government control also suffers from inadequate local level information and an inability to monitor dispersed and dynamic social and economic changes, because of limited professional planning capability and centralized planning functions. For instance, land is one of the key factors affecting urban development patterns and costs. However its ownership and availability are frequently unknown by central government planners, who nevertheless spatially allocate uses and facilities throughout the community as if they were all publicly owned.

Within the current government structure of Saudi Arabia, the Deputy Ministry for Town Planning (DMTP) of the Ministry of Municipal and Rural Affairs (MOMRA) is the principal agency responsible for physical planning activities throughout the Kingdom. Although the DMTP and its predecessor organization, the Deputy Ministry of Interior for Municipal Affairs, have initiated numerous physical planning efforts at local, regional, and national levels over the past three decades, in response to rapid, unprecedented development pressures. However, limited success has been achieved in implementing recommended physical development plans and strategies.

This paper, after examining the history of planning in Saudi Arabia and basic factors that have affected planning efforts, will analyze some of the reasons for the limited success and suggest policies and programmes that might prove more effective in the future.

## **Planning Phases**

Urban physical planning activities practiced in the Kingdom over the past three decades, can be classified into four distinct phases. These are particularly characterized by the types of planning documents produced by staff and consultants.

### **Phase 1: Guide Plans**

Before 1960, Guide Plans were prepared by the Ministry of Interior's regional planning offices in cooperation with municipal officials. In the Eastern Province, for example, where urban physical development was rapidly accelerating in proximity to the Arabian Gulf oil fields, guideplans were prepared for Dammam and 13 other cities. These plans, which had a 20 year time frame, projected the spatial distribution of commercial, residential, industrial, and recreational uses as well as community facilities.<sup>[1]</sup>

### **Phase 2: Master Plans**

The second planning phase, beginning in the late 1960s and terminating in the mid-1970s, witnessed the preparation of Master Plans for major cities, usually developed parallel with a regional planning analysis. During this period, two foreign consultants prepared regional development strategies together with 5 Master Plans and 6 Master Plans respectively for Eastern Province and Western Province cities. For the planning of Riyadh, Saudi Arabia's capital and largest city, and other Central Province cities, another international consultant was contracted.<sup>[2]</sup>

The Master Plans usually contained specific land use and transportation proposals for a 20 to 30 year time frame for built-up areas and projected growth areas. Within the Master Plan area, Action Area Plans were prepared for more concentrated, coordinated development programmes, that were expected to be completed within a shorter time frame.

### **Phase 3: Master Directive Plans And Action Area Plans**

During the third planning phase, which extended from about the mid 1970s to the mid 1980s, the Deputy Ministry for Town Planning contracted planning consultants to update or revise land use and transportation plans in a number of larger cities as well as to prepare comprehensive development plans for several regions, which had not been studied in earlier planning efforts. Planning work was done by foreign consultants, who usually operated in partnership with local Saudi firms for bidding and contractual purposes. Planning efforts during this phase focused on

developing two types of plans.

Action Area Plans were one category, produced primarily for large cities, including Riyadh, Jeddah, and Dammam, which are Saudi Arabia's three largest cities in relative population size. Action Area Plans were conceived as a device for the detailed planning and implementation of programmes and projects for specific geographic areas, which evidenced special problems or significant development pressures. They were perceived as providing flexibility for accommodating short term change, and they required early implementation within the concept of a more general City Master Plan.<sup>[3]</sup>

Master Directive Plans, also called Comprehensive Regional Development Plans, were the second type of plan produced during this phase. These plans comprehensively considered the physical, social, and economic factors that affect rural and urban development. Comprehensive Regional Development plans were prepared for Hail, Tabuk, Makkah, Al-Qassim and Al-Baha regions.

During this phase, the DMTP also formulated its first, National Settlement Strategy, establishing a hierarchical system of settlements to guide the Kingdom's future spatial development. This effort, continuing from 1978 to 1980, proposed the concentration of future population growth in established settlements.

#### **Phase 4: National Spatial Strategy (NSS) And Strategy To Limit City Growth**

From the mid 1980s to the present, the DMTP has utilized in-house professional staff and resident advisors to develop two major policy documents: the National Spatial Strategy (1990-2010) and the Urban Growth limit studies. The National Spatial Strategy is based on a hierarchical system of national, regional, and local growth centres. The main elements of the proposed first phase strategy are; efficient utilization of existing infrastructure and services, exploitation of the economic potential of selected growth centres, promotion of development corridors between urban areas, comprehensive development of rural and marginal areas. The second and third phases emphasize the diversification and dispersal of productive activities over the national space and the promotion of more spatial integration within a clearly defined hierarchical settlement structure.<sup>[4]</sup>

The Urban Growth Limit Studies establish phased strategy to limit urban growth in all 100 municipalities for the next 20 years. It is intended to serve as a development control mechanism for the provision of public services and utilities. The First Stage is the approved recipient area for government capital improvements

through 1995. Landowners in the Second Stage area (1995-2005) are able to subdivide, provided that they install basic infrastructure and utilities.<sup>[5]</sup>

## Forces Affecting Physical Planning Efforts

In Saudi Arabia, as in other countries, the quality and quantity of physical planning efforts are determined by numerous forces, including institutional, legislative, and human resources.

### Institutional Forces

The MOI's Deputy Ministry for Municipal Affairs supervised the preparation of Guide Plans and Master Plans produced during the first two planning phases. However neither the Ministry officials nor its planners could anticipate the massive physical expansion Saudi Arabian cities would undergo in the 1970s, brought about in part by the increased government expenditure in urban infrastructure financed by the substantial government oil revenues. In response to the rapid urban growth, major ministerial reforms occurred in 1975. The MOMRA was created as an independent ministry and designated urban management responsibilities. Some of its main functions included the control of urban development, construction of municipal services, and land administration.<sup>[6]</sup> The DMTP was subsequently established in the Ministry of Municipal and Rural Affairs and charged with supervision of spatial planning activities throughout the Kingdom.

Figure: 49 Products and Periods of Saudi Arabian Planning Efforts

Planning Phase	Type of Plan	Sponsoring Agency	Period	Plan/Strategy Timeframe
1	Guide Plans	DMIMA	1958-1968	20-30 years
2	Master Plans	DMIMA	1968-1975	20-30 years
3	Master Directive Plans and Action Area Plans	DMTP	1975-1985	5 years
	National Settlement Strategy	DMTP	1978-1980	30 years
4	National Spatial Strategy and Limits of Growth	DMTP	1985-1992	30 years

Notes: DMIMA = Deputy Ministry of Interior for Municipal Affairs  
DMTP = Deputy Ministry for Town Planning



A 1977 resolution by the Council of Ministers authorized the MOMRA Minister to grant local municipalities some freedom in city planning. A new structure of municipal management was introduced, based on the concept of limited decentralization. The five largest cities of Riyadh, Jeddah, Makkah, Madinah, and Dammam were designated Category-A (Amanats), and, by Ministerial decree, granted limited rights to plan and control development. Their mayors also became directly answerable to the Minister of MOMRA. This marked a new distribution of power and responsibility.

At the same time, smaller cities and towns in the Kingdom were classified into 5 categories (A to E), although Category E was eliminated in 1979. According to the size of population, they were delegated as much responsibility as they were considered capable of managing at that time. Since smaller cities and towns were not able to prepare master plans for their jurisdictions, due to the lack of technical staff, six MOMRA regional offices were established, in 1975 and 1976, to assist and supervise their planning and development activities. (Ministerial Resolution No.40/8/6, 1977).<sup>[7]</sup> Each regional office assists with all ministerial functions within its jurisdiction. Figure 50 shows the current administrative structure for planning activities.



Figure 50: The Planning and Development Organizational Hierarchy

### **Legislative Forces**

Primary legislation, adopted by the Council of Ministers as well as secondary legislation, approved by the Minister of MOMRA or the DMTP, have affected physical planning efforts and products.

For example, a 1977 Council of Ministers Resolution (No. 1170), is attributed with the change from very long term land use planning to short term action area planning. Until that time, planning efforts for major Saudi Arabian cities had produced Guide Plans and Master Plans, showing how physical development was expected to occur, over a 20 to 30 year period. These plans were considered of limited use for the implementation of the physical proposals of the Five-Year Development Plan, prepared by the Ministry of Planning because the time-frames of each were different. Moreover town planning offices in the municipalities had limited staff resources, which could barely cope with the pressures of day-to-day matters, such as building permits and land subdivisions. Little interaction occurred between the physical planning staff of the municipality and the government agencies responsible for supplying urban infrastructure and community services.<sup>[8]</sup> Therefore, the Council of Ministers directed planning agencies to:

"Define the scope of development of cities for the next twenty years, and illustrate this on the master plans...provided that the development period be divided into phases to comply with the Five Year Plans".<sup>[9]</sup>

In response to this Council of Ministers' primary legislation in 1977, MOMRA issued Circular No. 1226, distinguishing two types of plans: Master Directive Plans and Action Area Plans. Although guidance was offered for the preparation of these plans, the Circular did not explicitly specify the form and content of these plans.<sup>[10]</sup> That was left to the professional judgment of the DMTP and the terms of reference it developed in consultant contracts.

However primary legislative mandates are not always the cause of DMTP planning efforts. For example, the DMTP recognized the need to update the previously published National Settlement Strategy, which was formulated during the 1978-80 period, and to propose policy on the physical planning and spatial development of the Kingdom. Therefore, from 1988 to 1990, it prepared a National Spatial Strategy for 1990-2020.

Currently the DMTP is lobbying for the adoption of new planning enabling legislation at the national level, called the Spatial Planning Act, whose main objective is:

"...to accelerate the process of realizing a comprehensive and balanced spatial development among different parts of the national space and across different levels (national, regional, and local), while safeguarding Islamic values".<sup>[11]</sup>

While not mandated by the Kingdom legislation, the National Spatial Strategy and the proposed Spatial Planning Act are perceived as providing plan preparation and implementation guidance within the structure of the new political-administrative structure. In March, 1992, the Council of Ministers adopted a new administrative law, called the Provincial System, which subdivides the national space into numerous provinces, each with administrative responsibilities, including implementation of the development plan and budget as it relates to the province.<sup>[12]</sup>

Although Saudi Arabian planning legislation has mandated various types of plans and generally defined their objectives, it has not detailed the form and content of the plans nor described comprehensive, sequential procedures to prepare and adopt these plans or to achieve coordination among government entities involved in plan implementation. The proposed Spatial Planning Act attempts to address some of these inadequacies.

In 1986 the Council of Ministers took a bold step in limiting land subdivision activity in cities, which were rapidly expanding without planning control and experiencing excesses in land speculation. Council of Ministers' Resolution No. 13 gave municipalities a two year period to complete studies needed for the adoption of urban growth boundaries. The DMTP was given responsibility for coordinating the studies. In 1989, the Council of Ministers approved the DMTP recommendations. However no action has been taken in modifying the statutory authority of other ministries and agencies, which are responsible for the provision of infrastructure and utilities to assure consistency.

### **Human Resources**

Professional staff requirements for planning the cities are firstly, government staff, operating in municipal, regional, and national offices and, secondly, consultants, contracted to perform defined functions or to produce specified products. The size and quality of manpower staff, particularly the consultants inputs may change in relation to government agency planning workloads and Ministry of Finance funding priorities.

During planning phases 2 and 3, numerous foreign consultants were hired to do studies and prepare plans for regions and cities throughout Saudi Arabia.



Contracts were seen to expand the limited professional staff resources available for undertaking the intense planning effort needed as well as to obtain new information, technology, and planning methods from consultant planning practice. However subsequent to the third planning phase, use of foreign consultants has been significantly reduced, in part because of the lack of earlier success in implementing consultant planning proposals. In addition, degree-level programmes in urban and regional planning currently exist at four Saudi Arabian Universities, which provide a regular flow of planning resources for government service.<sup>[13]</sup> The interaction of national university staff and graduates with senior planning officials also provides a philosophical basis for formulating and amending planning legislation.

Notably a high percentage of professional planning resources are concentrated in the major cities, which also enjoy university planning programmes, particularly Riyadh, where DMTP headquarters are also located. Although professional planning staff may be located for short term assignments in other municipalities, long term residency in cities other than Riyadh, Jeddah, or Dammam is uncommon.

### **Reasons For The Limited Success In Implementing Plans And Strategies**

Several factors have contributed to the incomplete implementation of proposed physical development plans and strategies in Saudi Arabia some of the key factors are as follows:

#### **Unclear Delegation Of Planning Functions**

At the national level, MOMRA is only one of numerous ministries, which propose local physical infrastructure projects annually to the Ministry of Finance (MOF) for fiscal year budgetary approval, and every five years to the Ministry of Planning (MOP), for inclusion in the National Development Plan. The Ministries of Posts, Telegraphs and Telephones, Public Works and Housing, Health, Education, Agriculture and Water, Transport and Communications, to name a few government entities, are also responsible for facility planning and project implementation throughout the Kingdom. This annual and five-year project formulation process occurs with little coordination between respective government agencies. In addition, conformance with local plans produced by DMTP staff or its consultants is not a requirement in MOF project review and approval process.

In terms of planning enforcement at the local level, three governmental entities exist: the *Emirates*, the Municipalities and individual branches of central ministries.



Most of these entities operate with different objectives. No legislation has been adopted that clarifies the nature of the relationship among these three units. As a result, responsibilities for urban development, planning, development control enforcement, and appeal of planning decisions are fragmented.<sup>[14]</sup>

It is not clear how the recently adopted Provincial System will remove this institutional ambiguity at the local level, since it establishes another administrative entity, headed by an Amir, who has the rank of a minister. Moreover the Provincial System does not clearly address the functional relationships and responsibilities of MOMRA or the Municipalities.

### **Poor Mechanism For Sectoral Coordination**

As pointed out in the Fifth Five-Year Development Plan (1990-1995), lack of coordination between MOMRA and other government agencies has led to duplication of efforts on the one hand and insufficient service coverage on the other. As a result, inter-regional imbalances and urban-rural disparities continue to exist in municipal development. Also highlighted is that physical planning practice lacks sufficient standardization and institutionalization of enforcement procedures.<sup>[15]</sup>

The coordination issues are not new. For example, Consultant reports in 1976 indicated that timely and comprehensive communication on planning matters between Ministries was unsatisfactory and that development control staff was scarce, inadequately remunerated, overloaded, and could not properly fulfill their functions.<sup>[16]</sup>

### **Inadequate Development Control Mechanism At Local Levels**

In terms of local development control, the 1977 Law establishing Municipalities and Villages makes municipalities responsible for managing urban development, which is done primarily through the construction of public infrastructure and the issuance of building permits.

In terms of public infrastructure, most municipal capital expenditures fall into discrete budgetary categories, such as local roadways, water and sanitary sewer facilities, parks and playgrounds, and municipal buildings (government offices, markets, slaughter houses, etc.). With the exception of the Class-A Amanat's of Riyadh, Jeddah, Dammam, Makkah, Madinah, and the Taif Municipality, which enjoy some autonomy, all other municipalities are essentially administrative dependencies of MOMRA. Their operating and capital budgets are submitted annually to MOMRA, and, once approved, are submitted to the MOF for funding

approval.

In terms of building permits, only private construction is regulated. Permits are issued for new construction only in officially approved subdivisions, to make sure that vehicular access to the property is possible. Municipalities currently do not exercise authority to regulate projects of Ministries or other government units, although the 1977 law gave them the right to issue (or deny) construction permits for all public installations.<sup>[17]</sup>

Building additions, renovations, and accessory structures are difficult to regulate, because of the lack of enforcement officials. It is also impractical to supervise construction activities that occur behind property walls. Once a residence is occupied, it is very difficult to gain entry because of Islamic attitudes towards family privacy.

#### **Poor Local Participation In The Plan Making Process**

Contracts with foreign consultants have had provisions for counterpart participation by Saudi Arabian professionals and technicians in planning activities. However, due to hiring difficulties, reluctance by central staff to take on-field assignments, administrative restrictions, and numerous other factors, effective on-site involvement of Saudi professional and technical staff was virtually non-existent or intermittent in many planning efforts. Annual evaluation reports by foreign consultants frequently referred to this difficulty. Although they realized that review and input by Saudi counterparts would have enhanced the quality of plans and the ability to implement them, foreign planning consultants were under tight budget and time constraints, which were being rigorously enforced by Riyadh-based contract administrators. Therefore plans were completed with minimum local participation.

As an example, after the first year of planning in Jeddah, Sert Jackson International/SaudConsult emphasized that a major contract implementation problem was that the liaison officer from the DMTP had not been appointed, U.N. advisors had not been assigned to the Project, and no Saudi staff had been seconded to the Jeddah Planning and Development Department. Two years later, in its Third Annual Evaluation Report, the consultant states, "the major area in which no progress has been made and continues to be a problem is the training of counterpart Saudi staff. At this point in time, it does not appear that Saudi staff will be assigned."<sup>[18]</sup>

Consultants were required to present planning reports and proposals to local

officials for review and acceptance prior to acceptance of the work by the DMTP. When this occurred, however, local officials generally were not well versed in planning concepts to fully understand the materials they were accepting. Therefore it is not surprising, that they subsequently would have little interest in seeing the plan or its recommended regulations implemented. [19]

Community organizations, special interest groups, and professional associations that provide review and watch-dog functions in other societies play a limited role in Saudi Arabian planning activities. Planning has substantially been top-down process with limited local input.

### **Plans Are Never Approved And Lack Legal Basis**

Master Plans typically consisted of text, maps, tables, charts, statistical data and numerous technical reports, much of which was too detailed, complex, and voluminous to be comprehended by local officials. In Europe and the United States, formal adoption of such detailed materials have also presented implementation problems, contributing greatly to the demise of many such planning efforts.

Master Plans for large project sites in Saudi Arabia under unified land ownership and control could be implemented more easily, provided government funds were earmarked for infrastructure development. This was the case for Jubail and Yanbu New Industrial Cities, the Riyadh Diplomatic Quarter, military cities, and major installations, where in-house professional consultants supervised master plan preparation as well as project implementation. There was less need for decision-makers to fully understand the voluminous, technical information.

However, for effective implementation of Master Plans prepared for Kingdom municipalities, where land ownership and development control is fragmented, it is important that plan implementors, as well as those who would be affected by plan implementation, fully understand and support the plan's recommendations. In the case of foreign consultant contracts with the DMTP, consultant work ceased when planning documents were accepted by the government. Government agencies, particularly the municipalities and the DMTP, had the responsibility for initiating the plan implementation process. Since no national legislation existed to define plan implementation procedures, documents were typically shelved after a short period of exposure and discussion.

### **Plan Proposals Go Beyond The Chartered Responsibility Of MOMRA**

MOMRA's national spatial strategies and master plans have unsuccessfully at-



tempted to programme the spatial distribution of physical infrastructure that is not included in MOMRA's or the municipalities' approved budgets. For instance, other government organizations have responsibility for implementing inter-urban roadways, schools, hospitals, mosques, central government buildings, bridges, dams, airports, and other physical infrastructure projects that may be needed to support urban development. However, strategies, plans, and projects proposed by MOMRA staff or its consultants do not require acceptance by these other government entities.

Some data collection and planning efforts of MOMRA have also been inconsistent with the primary responsibilities of MOMRA or Municipalities. For instance, recent consultant contracts for the preparation of regional plans have required the collection of detailed data on farm sizes, crops, storage and marketing facilities, agricultural extension and research stations, transport and communication services, marketing facilities, telephone, telegraph and telex services, and other activities which can be considered within the jurisdiction of the Ministry of Agriculture and other government entities.<sup>[20]</sup>

### **Functional Dependency Of Small And Medium Municipalities On MOMRA**

Although the 1977 Law governing Municipalities and Villages granted a wide range of traditional municipal government functions to local governments, little authority has been granted by the central government to the municipalities for identifying new sources of local revenues, for utilizing local revenues to address local needs, or for acting as independent administrative units of MOMRA.<sup>[21]</sup> In fact municipal officials are MOMRA employees directly answerable to the Minister and municipal governments are agencies of the central government, not autonomous local corporations.

In the absence of official Master Plans to guide local development decisions, subdivision plan approval becomes one of the main regulatory instruments for local growth management. Many subdivision plans for non-Amanat cities are prepared by the DMTP, and, even if prepared by a developer's technical staff, must be reviewed and accepted by the DMTP before local authorities can approve the plans. With such policies and procedures in place, little local initiative can be expected in plan formulation or implementation. On the other hand, the delegation of authority by central governments to local levels which might lack technical expertise or might abuse statutory authority could result in even greater problems.

While there are obvious advantages to decentralizing many of the planning and



development control processes as much as possible, MOMRA's current strategy seems to be to centralize such activities even more, in order to raise their quality before handing over the planning responsibilities to local authorities.<sup>[22]</sup> However without granting more administrative and financial independence to local governments, as the Law governing Municipalities and Villages implied, local initiative to accept these functions in the future may be lacking, particularly as local infrastructure needs may outpace central government resources and local government officials may be criticized by local constituents.

## **Possible Future Directions**

Considering these issues and constraints, there are several alternative directions in which MOMRA and the Municipalities might proceed in order to achieve greater plan implementation and improved local planning capacity:

### **Alternative 1**

To operate only within current legal and administrative structures by:

- a. preparing plans that contain only those capital facilities that are clearly and exclusively within MOMRA's jurisdiction to programme and implement, such as for local roadway infrastructure and municipal facilities (parks, markets, slaughter houses) and regulating only private sector development.
- b. establishing a practical hierarchy of planning services to be provided by MOMRA to municipalities, based on factors such as population, urban complexity, and rates of growth.
- c. gradually decentralizing MOMRA technical resources and strengthening local administrative and planning capability, so that development applications of the private sector can be reviewed, improved upon, and decided at local levels.
- d. setting up better systems for recording and monitoring urban information, such as property use and ownership, land prices, building occupancy, construction activity, and other demand-supply variables.
- e. sharing planning information and coordinating more actively with other government entities operating within or for the local jurisdiction.

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- f. contracting with consultants to provide continuous, on-site resident planning services, as opposed to short term contracts that focus on end-state plans, (until the quantity and quality of Saudi national planners is considered adequate).

### **Alternative 2**

To seek adoption of comprehensive, national laws that increase municipal autonomy and local planning authority, together with necessary administrative and institutional changes, such as, by:

- a. seeking more financial independence from the MOF and providing a solid legal basis for local revenue collections and expenditures by municipal corporations.
- b. seeking more administrative independence from MOMRA and decentralizing MOMRA financial and technical resources to local levels, so that the resources become, in fact, locally controlled.
- c. developing stronger local planning legislation, which requires inter-government review and comment on planning proposals, procedures for community input, plan requirements according to city size, deadlines for plan adoption, on-going planning work programme, simplification of enforcement activities, project consistency with adopted plans, financial feasibility, periodic evaluation and amendment.
- d. mandating municipal permit approval from all parties (public or private) that want to develop land or structures, or to renovate, expand, and demolish structures within the municipality.
- e. withholding central government funds from municipalities that have not adopted a plan, fail to implement it, or fail to periodically update it.

### **Alternative 3**

To find a middle ground between these legal and administrative extremes.

The challenges facing Saudi Arabia are similar to those of most other rapidly developing countries of the so-called Third World. Fortunately the government of Saudi Arabia has more resources to address the challenges and is committed to programmes of gradual modernization, while maintaining cultural values. However

a commitment to action is also needed, since many of the issues that have been discussed existed more than 20 years ago, when remedial actions were being urged.

While central government staff planners or consultants may continue developing plans for the Kingdom's cities, local government authorities ultimately will be responsible for overseeing implementation. If local officials have participated in the process of plan development and have continuing access to planning expertise, they will be better able to keep the plan visible, update it, and maintain its effectiveness in local decision-making. Unless central government authorities are willing to adopt strong planning and urban management legislation, which subjects major development actions to local review and approval and to provide adequate local planning resources for maintaining an on-going planning process, physical plans adopted by local authorities will not become fully effective instruments for managing urban development.

## **Qualities Of Effective Plans**

In addition to the above-mentioned requirements, governing bodies need to recognize the important qualities needed to make plans more effective, as follows:

**Understandable to Non-Planners.** A plan which contains numerous statistical tables, complex charts, and technical jargon, making it difficult for laymen to understand, will not be effective. By converting the supporting technical data into comprehensible information, the plan will provide a better foundation for making decisions.

**Subject to Periodic Evaluation and Updating.** To be a vital and effective instrument for managing growth, the plan needs to be evaluated and updated periodically, since all future development initiatives cannot be foreseen during plan preparation. There should exist an on-going planning work programme in place, even after the plan is adopted.

**Responsive and Flexible.** The plan has to be responsive to changing socio-economic conditions, such as variable population movements, rates of family formation, supply and demand imbalances, shifts in business activities, and trends in disinvestment. However it must provide a rational, uniform basis for decision-making.

**Internally Consistent with Regional and National Policies.** Plan elements have to be compatible and mutually supportive, such as in allowing only those land

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use densities that are sustainable by the plan's utility and transportation systems or maintaining consistency between land use plans and zoning maps. In addition, if national or regional policies mandate more housing affordability, it would be inconsistent for local planning to permit only single family villas on large lots. The screening of various plan recommendations and national /regional policies against one another to identify conflicts is a necessary step in the planning process.

**Not Unduly Regulatory.** Over-regulation required by plan implementation may be as ineffective as under-regulation. The former frustrates market forces and unnecessarily increases the cost of land, while the latter exposes the community to free market abuses without adequate concern for environmental degradation. Also it is difficult to reduce or make more efficient public bureaucracies that are not directly accountable to the communities they serve and have no performance evaluation mechanism to keep them productive or streamlined.

**Feasible and Realistic.** The plan must be implementable, in terms of financial and human resource availability, political and social acceptance, legal and administrative capacity. For that reason, when one entity is assigned the responsibility for preparing a plan and another entity the responsibility for implementing and updating it, problems can be expected. The local planning agency needs to be involved in both phases.

## **Conclusions**

In spite of the intangible benefits of Saudi Arabian physical planning efforts to date, a massive continuing population explosion mandates thoughtful planning policies, particularly regarding housing and land development. The annual population growth rate of Saudi Arabia is approximately 4 percent, a figure more than double the average growth rate of all countries in South America and approximately five times the population growth rate in North America (excluding Mexico).<sup>[23]</sup>

The population in Saudi Arabian cities is growing at even higher rates, brought about by substantial rural to urban migrations of Saudi population and increasing foreign population. In 1974, for example, Riyadh's population was estimated at 667,000. Eighteen years later, the 1992 Census reported 2,800,000 residents, which represents a population increase just over 8.3% per year. It may be noted that the population growth rate projected in Riyadh's original Master Plan (prepared by Doxiadis Associates in 1971) was outdated within four years. Similarly the new Master Plan, prepared by SCET International assumed a population growth rate of 3 percent per year, with a 1990 target population of 1,750,000.



This projection has obviously also been too low.

With population growth comes increased demand for land, but the land absorption rate in Saudi Arabian cities greatly exceeds the population growth rate. From 1980 to 1990, it was reported that Riyadh's urbanized area increased eight times, while population during that period had quadrupled.<sup>[24]</sup>

Saudi Arabia is fortunate to have many more resources than other rapidly developing economies for spatial planning and urban infrastructure investment. The challenge through the end of this Century will be to use those resources in cost-effective and productive ways, together with private sector resources, so that the prosperity enjoyed by current residents continues to be enjoyed in future decades.

## Notes

- [1] In addition to Dammam, Guide Plans were prepared for Al Khobar, Al Ahsa, Jubail, Qatif, Hafar Al Batin, Sayhat, Ras Al Khafji, Safwa, Rahimah, Nuayriyah, Abquiq and Tarut.
- [2] Eastern Province cities included Dammam, Al Khobar, Al Qatif, Al-Hassa, Al Jubail. Western Province cities included Jeddah, Makkah, Al Madinah, Taif, Tabuk and Yanbu. Candilis-Metra-Denco were the consultants for the Eastern Province, where Dammam is located. Robert Mathews, Johnson Marshall and Partners were the consultants for the Western Province, where Jeddah is located. For the Central Region, Doxiadis Associates Int. was awarded the contract.
- [3] Sert Jackson International / SaudConsult, Jeddah Action Area Plans "A, B, & E", Technical Report No. 13, DMTP, 1982, p. viii.
- [4] DMTP, National Spatial Strategy, 1990.
- [5] Council of Ministers, Regulations for the Control of Urban Boundaries, Resolution No. 13, 1986
- [6] McKinze International, Mastering Urban Growth: A Blueprint for Management, Report prepared for MOMRA, 1978.
- [7] Hossny Aziz Alrahman and Walead Abdullah Abdulaal, The Analysis of the framework of Planning Legislation in Saudi Arabia, DMTP (Mimeo) 1992.

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- [8] Abdal-Majeed Daghistani, Ministry of Information, Al Riyadh Urban Development and Planning, Riyadh, 1985, p.149.
- [9] Council of Ministers, Resolution 1170, 1977.
- [10] Alrahman and Abdulaal, op cit.
- [11] DMTP, Spatial Planning Act (draft) 1992.
- [12] Council of Ministers, The Provincial System, Article 23, 1992.
- [13] King Saud University in Riyadh, King Abdulaziz University in Jeddah, University of Minerals and Petroleum in Dhahran, and the King Faisal University in Dammam. Dammam and Dhahran are adjacent municipalities in the Eastern Province.
- [14] Hossny Aziz Alrahman and Walead Abdulaal, The Administration of Urban Planning in Saudi Arabia: A Review of Legal Aspects, DMTP (Mimeo) 1991.
- [15] Ministry of Planning, Fifth Five-Year Development Plan, 1990.
- [16] G. Candelis-Metra International Consultants, Draft Master Plan for Al-Qatif (DMTP), 1976.
- [17] Council of Minister, Law Establishing Municipalities and Villages, Chapter 2, Article 5, Para. 2, 1977.
- [18] Sert, Jackson International / Saud Consult, Jeddah Action Plans, Technical Report No.16, p.11 (1982). Annual Evaluation Reports for other major cities also refer to the difficulties of minimum Saudi counterpart involvement. After three years of work, Dammam's consultant stated that the training and participation process was a long way from its objectives, because of the lack of Saudi staff to form the main nucleus of an integrated Saudi work force. (Technical Report No. 16 by CM2H Hill International and CEG, 1979)

Similarly after three years of work in Madinah, the DMTP consultant strongly recommended that the requisite representation of Saudi counterpart staff be made on the project, so as to have an opportunity to learn how to perform various tasks. (Technical Report No. 16 by the Group of Arab Consultants for Development and Reconstruction, 1980).

- [19] Plans for the city of Hail are one notable exception, where the Regional Governor has taken a very active role in trying to maintain adherence to the Master Plan.
- [20] See Scope of Professional Services for Comprehensive Regional Development Planning Studies conducted in Tabuk, Al-Qassim, Hail, Makkah, and Al-Baha during the mid 1970s to the mid 1980s.
- [21] The first article of the Law Establishing Municipalities and Villages states "A Municipality is an artificial entity, which is financially and administratively independent...". Other articles in the Law give municipalities a great deal of autonomy and power to regulate private and public entities, to collect and use municipal fees, to impose fines and penalties. However, in actual practice, Municipalities are totally dependent on central government funding and spending approvals.
- [22] Gary Hack, Working Paper on National Planning Standards: The Process Dimension, DMTP (Mimeo) 1993.
- [23] At the end of 1992, the National Population Census reported 12.3 million Saudi and 4.6 million non-Saudi residents, or a total of 16.9 million. At the end of 1974 (when the previous national census was completed), there were just over 7.0 million total residents.
- [24] Arriyadh Development Authority, Summary Report on Riyadh Development Control Regulations, 1992. In large part, this phenomenal land absorption rate can be attributed to generous government development subsidies, particularly the government land grant programme and the Real Estate Development Fund (REDF) loan programme.

The land grant programme provides free plots of land to government employees and low income residents, while the REDF loan programme offers an interest-free loan of maximum value of US\$ 80,000 to cover construction costs. A 30 percent discount (grant) is allowed to borrowers, if re-payments are made on time. Ownership of land is a precondition for obtaining a REDF loan, and over 80 percent of the borrowers have been granted free land plots by the government. It has been estimated that from 1975 to 1988, over 830,000 housing units have been financed under the REDF programme throughout the Kingdom and that over 2 million urban plots have been distributed under the land grant scheme. (Saleh Al Hathloul and Narayanan Edadan, "Growth and Distribution of Urban Settlement in Saudi Arabia,"

Geojournal, Vol. 23:3, 1991).

Aggregated together, the components of government grants include a) the value of the land, b) the value of the debt service, c) a maximum discount of 30% of the loan amount, if re-payments are made as scheduled, and d) the value of infrastructure and utilities. Making use of all these grants, a potential first-time homeowner would receive more than 50% of the total housing costs that would be incurred in traditional markets. Substantial subsidies are also offered on water and electricity rates.

The large number of residential plots and the houses produced under these two government programmes has contributed substantially to monotonous, low density urban sprawl and leapfrog development. Much of the new development manifests the following uniform characteristics: the residential plots range from 400 to 600 sq. mt. in area, plots are square, houses are two-story detached villas. In addition, land grant sites have frequently been non-contiguous, scattered sites that are often distant from existing built-up areas. Consequently, the costs for infrastructure and operations and maintenance tend to be high and inefficiently used. These costs are entirely derived from central government revenues, due to the absence of a property tax system.



# 12 The Role Of Planning Authorities In Urban Development: The Case Of Arriyadh Development Authority<sup>[1]</sup>

Zahir A Othman

A polis of yesterday has changed to a metropolis of today. This urban transformation, both in scale and magnitude, has resulted in broadening the limited perception of planning and evolution of complex planning process. It has put an end to end-state master plans and has oriented towards rational, comprehensive and strategic planning that emphasized the role of scientific intelligence. Advances in technological and methodological innovations have further made it possible to materialize this concept. Therefore, city planning and management perception, particularly at local level, continued to change with city development. Imprints of such transformations are hardly visible in cities where that process took centuries. The case of Riyadh is different as it has experienced this process in less than four decades and therefore, its urban fabric clearly exhibits such urban transformations.

## Profile Of Riyadh [2]

In less than forty years, Riyadh has developed from a small town of adobe structures enclosed by a defensive wall, to a modern metropolis of 2.8 million inhabitants in 1992. The city area expanded from one sq. km. in 1930s to more than 1500 sq. km. in 1990. The country achieved a reasonable economic and political stability during the late 1930s that has resulted in the influx of hundreds of immigrants into the city. First building constructed outside the city wall was the King's palace at Al-Murabba, one kilometer north of the city. Major infrastructure and services in the city were laid down since 1938 and the city wall was demolished in 1949. Major changes in the city's functions and form began in 1953 when the ministries and government offices were transferred to Riyadh from Makkah. The city's growth has been uncontrolled since 1975 due to a massive construction boom and it has expanded haphazardly with almost no coordination among the government agencies responsible for the provision of public utilities and services. Economic recession in 1982 exposed the city's urban problems, especially the improper provision and distribution of infrastructure and services. Approximately 51% of the present area of Riyadh is undeveloped. As a result, the net residential density (34 dwelling units per hectare) in the city has remained consistently low

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since 1977. Currently, about 30% of the dwelling units in the city are unoccupied. Primary modes of travel within the city are the private automobile and pick-up trucks. Public transport is not popular among Saudis. Major destination of the non-local trips is the central area of the city. The government sector plays an important role in the economy of Riyadh and employ 39% of the total city labor force.

Following is an overview of urban planning process at the national and local levels that provides a perspective to evaluate the role of the 'High Commission for the Development of Riyadh' (HC).

### **Urban Planning Stages At The National Level**

The earliest attempt to formulate a budget for the government was made in 1929 but it was only in 1934 that the first budget was announced (Gazzaz, 1968: 684). Oil was discovered in the Eastern Province in 1933 and commercial production started on 1938. Since then, the process of rapid growth and modernization of the country has continued.

The financial crisis that the Kingdom had encountered in 1956, prompted the decision makers to establish the process of planning to maintain economic stability. Initially, the Supreme Planning Board was established in 1961 to suggest means to build a solid national economy. In 1965, the Board was replaced by the Central Planning Organization, which prepared the First Development Plan in 1970. The Central Planning Organization was upgraded as the Ministry of Planning in 1975 to prepare five year development plans and to estimate the necessary funds required for their implementation. Consequently, urban planning and development in Saudi Arabia has gone through three stages.

**Stage 1: (1932-1959):** First attempt towards urban planning was made in 1937 when the government issued municipal regulations to manage and direct regular urban development and functions in major cities. The Ministry of the Interior which was then responsible for all municipal activities was instituted to enforce these regulations. Arabian American Company (ARAMCO) had played a principal role in developing the Eastern Province as well as to set a trend in urban planning in the country. It was requested in 1947 to plan the cities of Al-Dammam and Al-Khobar (Mousalli, 1969, p.38) and introduced a gridiron pattern and villa type houses for the first time in the Kingdom. Although the two cities were new and the applied pattern might have been appropriate for them, the same pattern was later applied in all cities of the Kingdom contributing to a process of neglect

and destruction of the old urban areas.

**Stage 2:** (1959-1975): The second stage began when the government requested the United Nations to assist in preparing development plans for the major cities in the Kingdom. A team of town planners was sent in 1959. Consequently, two planning offices were established in Jeddah and Riyadh in 1960 (Mousalli, 1969, p.38). The oil boom induced economic growth in the mid 1970s. resulted in the subsequent urban growth that gradually changed the pattern of Saudi cities. They expanded in every direction leaving the old sectors to deteriorate. The fast development of Saudi cities created deficiency in infrastructure, housing, and urban facilities. The rapid expansion and the heavy influx of immigrants to cities increased the demand for land initiating a tendency for land speculation. Neither the United Nations' team nor the established planning offices could articulate policies on physical development determining its objectives and patterns. Had those policies existed and envisioned the future needs, a clearer picture and better plans could have been drawn for the cities.

In the context of the First Five Year Development Plan, the government started a programme of urban and regional planning and studies for the Western, Northern and Central Regions were commissioned in 1972. Similar studies were conducted for the Eastern Province in 1973 and for the Southern Region in 1974 (Al-Hathloul & Rahman, 1989 p.208).

**Stage 3:** (1975-To-date): During this period of institutional development, the central planning agency was transformed from a small department under the Ministry of the Interior to a General Directorate for Planning and later to the Deputy Ministry of the Interior for Municipal Affairs. An independent Ministry of Municipal and Rural Affairs (MOMRA) was established in 1975 replacing the Deputy Ministry of the Interior for Municipal Affairs to achieve a national perspective of urban development and to organize the physical planning process which has been overlooked by the earlier plans.

MOMRA began the Action Master Plans projects in 1976-77 for seven major cities in the Kingdom. These plans succeeded the Doxiadis Master Plan for Riyadh and other regional plans. Planning offices were then established in various cities to monitor and update their master plans, and to provide necessary guidances and advices to the related authorities. The ministry reactivated urban and regional development plans during the early 1980s (Al-Hathloul & Rahman, 1989, p.211). Although several master plans were prepared for different Saudi cities and regions, only the first Master Plan of Riyadh prepared by C.A. Doxiadis was approved by the Council of Ministers (COM).



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Currently, the government is concerned with the issue of uncontrolled expansion of cities. Several suggestions were made in the past to restrict development beyond the existing urban areas such as to stop new subdivision plans outside the limits proposed by the master plans or to permit new subdivisions without commitment for the provision of utilities and services. Neither of the suggestions were put into practice due to many structural factors. The only feasible solution for the cities' uncontrolled expansion was found in a resolution (The Council of Ministers, 1970) to determine urban limits of cities for the next 20 years as defined in their master plans (Qadhi and Ibrahim, 1981, p.97). This resolution, although provided the necessary political will, was never implemented because of the outdated state of those urban limits. Besides, the institutional factors also played a significant role in ignoring the resolution. Cities continued to develop haphazardly resulting in an unbalanced mixture of land uses, extreme variation of densities and leaving large chunks of unserviced land within the urban areas. Due to the operational difficulties in providing urban utilities and services to the sprawling urban suburbs, the Council of Ministers issued in 1985 a resolution suspending the approval of any land subdivisions for two years. MOMRA was assigned the responsibility to define urban limits for all cities in the country and a ministerial committee was formed to study the situation of vacant lands within the urban areas. The Council approved the urban limits of cities and policies for their implementation in 1989. The resolution was moderately late, as cities have widely expanded creating major problems that would require a long time to remedy. However it can help, if properly implemented, as a tool to control urban sprawl.

## **Urban Planning In Riyadh**

Urban planning process in Riyadh can broadly be classified into the following three phases; pre 1968, 1968-76 and 1976-83 that is prior to the functioning of the Arriyadh Development Authority as a technical body for the HC in 1983.

**First Phase:** (Pre 1968). Urban planning activities were concentrated in the Town Planning Office of the Deputy Ministry of the Interior for Municipal Affairs in early 1950s. The role of Riyadh Municipality was limited to incorporate newly developed areas within its jurisdiction for routine or taxation purposes. There was no standardized development control regulations or legislative mechanism to guide the city development. Instead, a set of regulations called 'Road and Building Regulations' had been drawn up. Later, certain decrees were added to it, but that was not promulgated as an overall comprehensive planning law. It merely indicated land uses by large areas and specified some minimum standards. The Municipality was not the sole Authority for development control. Ministries or other government



institutions were not obliged to follow the said regulations and could draw up their own regulations for implementing their projects. Building regulations were non-comprehensive. Dispersion of authorities existed among various agencies which were responsible for the design, construction and maintenance of the public utilities in the city.

**Second Phase:** (1968-76). The Deputy Ministry of the Interior for Municipal Affairs assigned the planning of Riyadh to Doxiadis Associates in December 1967. Their Master Plan was finally submitted in July 1971 and was approved by the Council of Ministers in 1974. This was the first Master Plan for the city. It applied the gridiron pattern for the city, and endorsed the villa (Al-Hathloul and Rahman, 1989, p.209) as future house type. It further suggested two axis for the city, North-South as commercial corridor and East-West as administrative corridor. The development control regulations suggested by the master plan were comprehensive. Riyadh was divided into three planning zones, each having its own set of regulations. While some of the Master Plan recommendations have been effectively implemented, most of its land use control regulations could not be successfully implemented.

**Third Phase:** (1976-83). Exceptional growth of the city induced by the increased oil revenue, as a result of the oil price readjustment in 1974, created a highly dynamic and speculative land market that eventually caused the first master plan to be obsolete soon after its approval. The second master plan work for the city by the SCET International was completed in 1983. This master plan continued the physical structure suggested in the first master plan. However, its diversified objectives include: improving the image of the capital city, to propose an institutional structure to regulate the city development and to implement the revised master plan, to modernize the city; yet retaining its cultural and architectural heritage, to suggest measures to control land speculation and promote private development. Its major recommendations were the development of action areas; comprehensive land use strategy, revised development control regulations that includes elimination of mandatory setback requirements, introduction of the sky exposure plan, revised institutional structure, creation of autonomous zoning authority, encouragement for the extensive use of Planned Development Unit, linking the execution plans with the five year development plan programmes and budgeting, and the enforcement of minimum time limit for construction within the urbanized areas.

### **Review Of Planning In Riyadh**

Planning was first conceived in Saudi Arabia as a tool for economic development. Even though, subsequently physical planning was introduced to implement

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economic policies to achieve a better physical environment they lacked policies and goals for phases beyond their definite time frame. Some of the forces that have greatly influenced the planning process in Saudi Arabia are:

**a) Multiple Planning & Development Agencies and Lack of Coordination:** The Ministry of Planning is the organization responsible for national planning, at the sectoral level, whereas the Ministry of Municipal and Rural Affairs (MOMRA) is responsible for the spatial planning and development of cities and villages. Besides, the government has established several distinctive commissions for planning and development of special urban areas. Nevertheless, all ministries acted as independent bodies, lack of coordination became a convention of development process in the Kingdom.

**b) Housing Development Programmes and Land Grants:** Subsequent to the oil boom in early 1970s, a consolidated housing construction programme was initiated to fulfill the housing needs. Today housing supply is more than the demand thus resulting in large number of unoccupied housing units. The land grants system played a major role in creating very low density and fragmented spatial pattern. Majority of land grants were beyond urban limits creating isolated and unserved neighborhoods. Large amount of allotments of land represented a more serious challenge to the structured development of cities.

**c) Disregard of Regional Planning:** The attention of planning in the Kingdom was concentrated at two levels, national and local. A close look at the regional issues, resources and needs, was ignored until the early 1980s. The Third Five Year Development Plan suggested the need to develop regional plans as means towards determining needs and priorities for development. As a result, the Ministry of Municipal and Rural Affairs has initiated a series of comprehensive regional plans, however, the regional plans prepared by the Ministry of Municipal and Rural Affairs lacked the tools for implementation, funding and political enforcement. The assessment of regional needs varied from one ministry to another. If any regional system is to work satisfactorily then there must be one overall authority that can influence decisions across a whole range of functional activities at the regional level. These pressing issues required the establishment of an organization that can effectively address these issues and direct the regional development in a comprehensive manner.

This national perspective to a great extent, had influenced the planning and development process of Riyadh. The master plans for the city of Riyadh proved that end-state zoning documents are irresponsive to the dynamics of urban growth. Their proposed solutions could not solve urban problems in a rapidly changing

environment. For example, the Doxiadis Plan had predicted a population growth rate for the city of around 6.6 per annum over the following 20 years. The actual figure averaged 12% ((SCET International, 1982, p.4). The growth predictions were almost immediately became obsolete by the economic boom of the 1970's. The Doxiadis plan had proposed a compact city for 1.4 million people by the year 2000 within an area of 304 sq. km. Today's population is 2.8 million and the city covers an area of more than double as compared to the Doxiadis estimate. The SCET plan, being developed during the boom period, expected the continuity of rapid development and suggested that the urbanized area of Riyadh would be approximately 850 sq. km. for 1.6 million people by 1990 (SCET International, 1982, p. 6). However, the existing size is at least 30% larger than the suggested urban area of the city. One cannot blame the two master plans for all the critical planning and development problems of the city. Although both plans lacked flexibility, they have sufficient professional merits and did contribute in giving guidances to the city development. The limited professional capabilities of the urban planning and development agencies, the style of political and administrative system of the country and the over-expectations from the master plans were the main reasons for the pattern of development the city had experienced in the past. Had the policies and recommendations of the two master plans been wisely implemented, the city could have had a better structure. The plans were partially implemented ignoring their most vital issues such as the need for staged and controlled development. SCET, knowing the administrative and political system, suggested that the city growth limits for 1985 and 1990 should receive the endorsement of the Council of Ministers (SCET International, 1982, p.VIII). Based on that, a programme for public facilities and services was outlined within the framework of the five year plans. However, the master plan was not approved and the suggested city limits were ignored.

## **The High Commission For The Development Of Riyadh**

A development plan for a volatile and complex urban area can never be truly comprehensive and complete without a mechanism for its implementation, updating, feedback and review. In other words, a process for continuous strategic planning is needed accompanied by the necessary ability to use policies and regulations to monitor and control development while it is happening. The establishment of the High Commission (HC) for the development of Riyadh is aimed to provide this institutional structure for the comprehensive development of the city.

Establishment of the 'the High Commission for the Development of Riyadh' was a significant step in the process of local planning in Saudi Arabia. The com-



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mission is the only agency of its kind in the Kingdom. In other cities, municipalities are responsible for the planning and implementation of municipal services. There is no agency responsible for comprehensive planning or coordination between the services agencies. Based on the Doxiadis master plan proposal, the COM approved the establishment of the High Commission (HC) for the Development of the city of Riyadh (Resolution No. 717, of June 19, 1974). The (HC) was constituted of members from the planning and services agencies.

The COM authorized the Minister of the Interior to issue the regulations regarding the powers and responsibilities of the HC. The minister issued the Resolution No. 212/4 describing the following powers of the HC on February 1, 1975:

1. Development Responsibilities:
  - a) To draw up the policy for the development of Riyadh.
  - b) To approve all the statutes which define the execution system of the master plan.
  - c) To approve the development plans for the city within specified programmes for all ministries, government departments, general corporations and the private establishments which are related to public benefit.
  - d) To approve the time schedules for the execution of the plan in compliance with the development plans and existing financial commitments.
  - e) To approve programmes of services and the financial requirements and budgets.
  - f) To approve the areas that should be expropriated for roads and public services.
  - g) To approve means of involvement of the private sector in the development programmes and the utilization of expertise and facilities in this area.
  - h) To approve the implementation of the plan by the municipality of Riyadh.
  - i) To suggest alterations and development to the city master plan as the need arises.
2. To delegate some of the above mentioned responsibilities to the municipality of Riyadh.
3. To approve all development funds before they are allocated for the projects in the city.
4. To setup an office for the secretariat of the HC to be established in the municipality of Riyadh.



Despite the impressive responsibilities stated in the Minister's resolution, the HC was tied by bureaucracies of the government agencies. Prime responsibility of the HC was to ensure prompt implementation of the Doxiadis Master Plan. The HC was not looked at as the city planning and management agency and was only given the right to suggest alterations to the master plan which were then to be reviewed and approved by a higher authority. This trend made the HC less influential in the later stages of the city development to the extent that its need or existence was even questioned. Since the regulations of cities and villages issued by the Royal Decree No. M/5 on February 21, 1977 has suggested the establishment of municipal councils in different cities of the Kingdom as supervisory councils, the COM Resolution No. 439 issued on May 15, 1978 approved the continuity of the HC until the establishment of the municipal council. This decision, however, resulted in confusion about the HC status. While it was interpreted positively by some agencies as a formal statement for continuity of the HC by raising its authorities similar to the municipal council; other agencies interpreted it as a notice to dissolve the HC as soon as the municipal council is established. Despite any of these interpretations, the municipal council of Riyadh has never been established.

Based on the recommendations of the COM Resolution No. 439, the Minister of MOMRA reconstituted the HC increasing the number of members to 14. It included four members from the private sector. This was to fulfill the new charter of the HC that has included the municipal council responsibilities.

The HC realized the need to establish a definite status and organize its rules and regulations in 1978. Several proposals were made suggesting the complete independence of the HC and linking it directly with the COM. For political reasons the HC was associated with the Minister of MOMRA. The HC also noted the need to establish a technical body to help it in performing its duties. Even though, a secretariat office for the HC was originally proposed by the Minister of the Interior and by the HC in its meeting on October 9, 1978 it was never established nor its responsibilities and those of the HC secretary general were defined.

The COM Resolution No. 37 (December 8, 1981) boosted the authorities of the HC. It authorized the HC to coordinate and execute all infrastructure services in the city in order to solve the lack of coordination between utility agencies. The resolution also stated that all funds for infrastructure works would be allocated as part of the HC budget. However, for institutional and budgeting reasons, the responsibilities of the HC were limited to the public utilities and services coordination processes.

Since the proposed responsibilities could not be performed in the absence of a

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technical body for the HC, based on a request from the Chairman of the HC, the COM issued Resolution No. 221 (June 12, 1983) establishing the Arriyadh Development Authority (ADA) directly affiliated with the HC as its executive technical and administrative body. The ADA was formed by combining the Bureau for the Project of the Ministry of Foreign Affairs, the Diplomatic Quarter (DQ), the Office of Redevelopment Project of the Justice Palace District (JPD) and the Urban Planning Departments of the Municipality of Arriyadh. The HC was formally assigned the responsibilities of comprehensive planning for the city. The resolution stated that,

"the HC will have the direct responsibility of planning the city, which will be its prime duty. In addition, there will be no need for establishing special offices in the future for any new major projects".

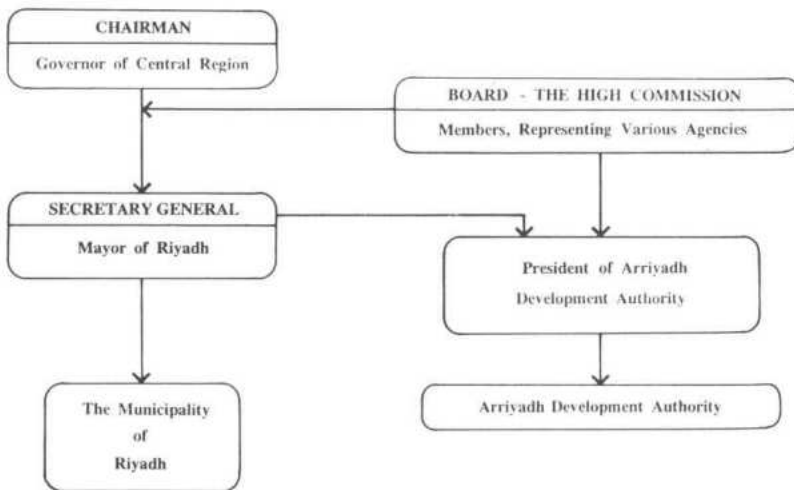
The HC was also authorized to continue to exercise the powers of the DQ and JPD development offices. Therefore, a new High Executive Committee was established combining the previous High Executive Committees of the DQ and the JPD. The ADA commenced acting on its wide range of responsibilities on January 10, 1984. The COM resolution No. 221 is the milestone in the evolution of the HC as it ascertained and consolidated the powers and responsibilities of the HC. The COM Resolution No. 263 issued on August 12, 1984, increased the number of the HC members to 18. It added the Chairman of the Consolidated Electric Company for the Central Region and the Deputy Ministers of Communication, Agriculture and Post, Telegraph and Telephone as new members.

The Minister of Planning suggested to the Chairman of the HC on February 20, 1988 to expand the responsibilities of the ADA to cover the whole region of Riyadh. Such an expansion is expected to bridge a gap in the planning process of the Kingdom. The HC favored the suggestion and found it quite practical. It would help the ADA in having a broader look at the city especially in fields that are not limited to the city's boundaries such as economic planning.

The ADA and the HC found the above proposal an effective justification to institute clear and comprehensive regulations for the HC, unifying all the scattered decrees that defined the HC responsibilities. The HC assigned a subcommittee to review the implications of the suggestion and propose revised regulations for the HC. The subcommittee fulfilled this task and a comprehensive proposal for the High Commission for the Development of Riyadh Region was submitted to the HC. It was thought, however, that the proposed regulations should be limited to the city of Riyadh. Besides, the HC was given powers to conduct some studies and projects in the region. The proposal recommended institutionalizing the previous

regulations along with the proposed regional role of the HC. The proposal would have made the ADA the prime body in the city and the region. But, later, it was withdrawn with a view that it is unnecessary to introduce a new body for regional development. Moreover, representatives of some ministries were hesitant about the proposal as they felt that the proposal would reduce their areas of influence in the city development.

The establishment of the HC was a great opportunity for the city (Figure 51). However, since its establishment in 1974, the commission could not perform all its duties. It acted as a supervisory body monitoring the implementation of Doxiadis



*Figure 51: The High Commission for the Development of Riyadh - Organizational Structure*

master plan. Most of the issues discussed in the HC meetings were requests for exemptions from some of the regulations of the master plan. The HC lacked comprehensive development policies and experienced staff. The need for such policies was pressing during early 1980s when the city was experiencing accelerated development. The HC remained concerned with the issues related to land use regulations. Although the resolution of the Minister of the Interior had suggested to establish a secretariat office of the HC in the municipality, it could not be established. The HC did not have a capable executive body and the Municipality did not have adequate planning capabilities. The position of the secretary general of the HC held by the mayor of Riyadh was an honorary position. This created a technical void in the system.



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Lack of comprehensive regulations for the HC and for the ADA has always made it difficult to implement the development plan and enforce the required development controls. Most of the service agencies in the city, especially the municipality, could not accept the presence of ADA as the prime development agency in the city. They all thought that the ADA role should be limited to the development of major projects. There was a tendency to differentiate between the ADA and the HC. The ADA believed in its position as the executive body of the HC which has a board of representative of some government agencies and members of the public chaired by the Chairman of the HC. Most members of the service agencies represented their own bureaucracy, and did not consider themselves members of a board responsible for the comprehensive development of the city of Riyadh. They could not conceive the drastic changes in the approach of the HC after the establishment of the ADA.

The role of the HC, as compared to the past, however, changed substantially with the establishment of ADA (Figure 52). The new role required the HC to address some pressing urban issues which were complex in nature and diverse in scope such as development of vast chunk of vacant serviced land within the city, defining the urban limits for the city to control the urban sprawl, coordination amongst urban services under the control of various public agencies with the city development, improving traffic conditions and street network, suggesting a long term comprehensive development strategy for the city.

However, the foremost need was to assemble an obvious picture to the city to evaluate its existing conditions and development trends. This rational approach required collection of extensive data, its analysis and interpretation, which is expensive and time consuming. Hence, the HC adopted a strategic development approach for the city that consisted of two steps; first to identify issues of immediate concern and establish their priorities and secondly to establish a permanent information system for future urban planning and city management.

## **Activities Of Arriyadh Development Authority**

The ADA started a development approach based on establishing a data base to enable a better vision of the city and its planning. It monitors and guides the city development in a coordinated, comprehensive and effective manner by making use of its extensive urban information base. The ADA activities are comprised of the following technical programmes to understand the issues from the different perspectives and suggest strategies for the future development of the city:



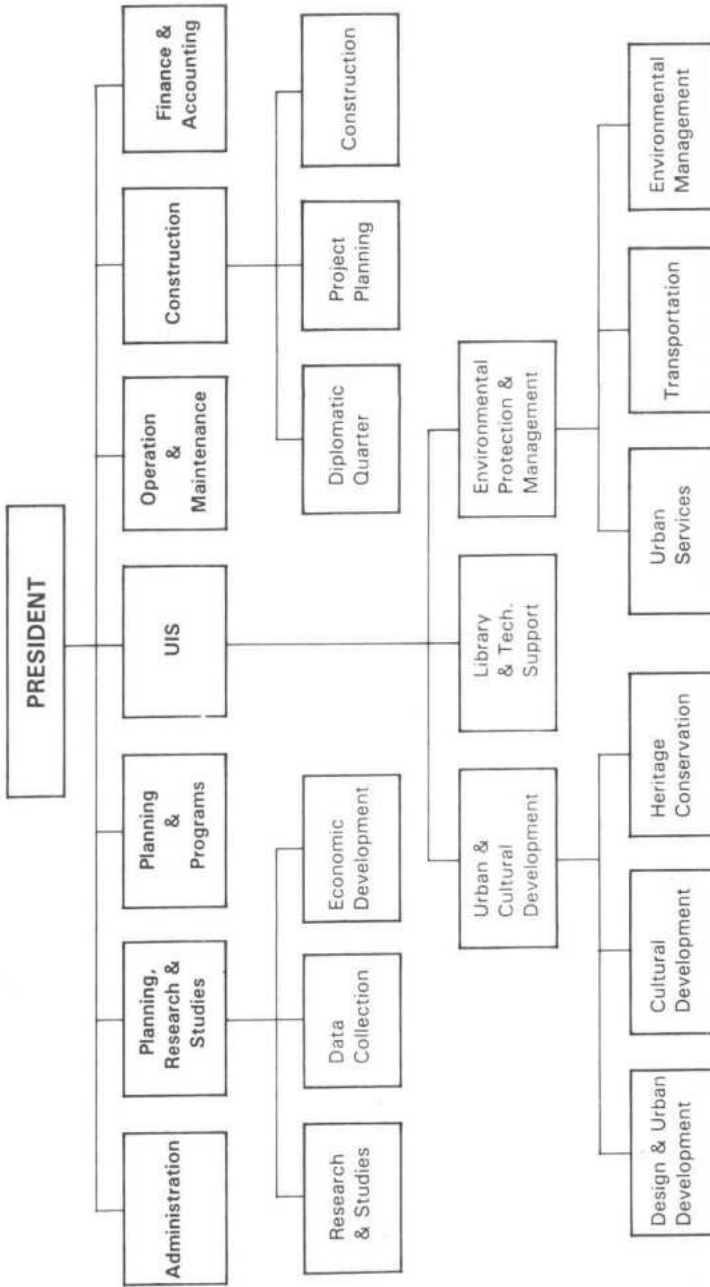


Figure 52: Organizational Structure of Arriyadh Development Authority (ADA).

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- Economic Development Programme
- Urban Development Programme
- Urban Services Planning Programme
- Urban Studies and Research Programme
- Urban Intelligence Services Program
- Environmental Management and Protection Programme
- Cultural Development and Preservation of Urban Heritage Programme
- Construction Programme
- Operation and Maintenance Programme

### **Comprehensive Planning And Development Control**

It is a primary concern of the ADA as its main planning task is to prepare various policies for the planning and development of the city. In addition, the ADA is involved in the modernization of current planning measures and their norms. Rather than developing a master plan based on rigid zoning scheme, the ADA adopted the strategic approach for a comprehensive growth management plan. The essential difference is to identify and use a variety of reinforcing growth management instruments that operate through the normal market forces either controlling or directing the city's growth. Fixed zoning schemes attempt to impose direct control on these market forces and are often in conflict with them. Coordination of services and utilities is an essential tool in the ADA's approach. Based on available data about the city, the ADA prepared a coordinated plan for the provision of services and utilities. The plan set the priority areas, the time schedule and the estimated cost for implementation. This is aimed to help the ADA to direct the development of the city and avoid further urban sprawl.

### **Major Urban Projects**

The ADA develops major urban projects in the city in order to achieve its comprehensive development goals. The development of the JPD aims to revitalize the city core and activate it as the traditional, historical, political and commercial centre of the city. The development of the DQ attempts to enable the city to perform its role as a capital of the country. Development of Riyadh Public Park is aimed at to fulfill the needed cultural and recreational needs of the city. The development of the Thumama Nature Park and Wadi Hanifah, both of which are unique natural assets of the central region, aims to protect the environment besides the provision of recreational facilities in these areas. Development of major projects will remain the main responsibility of the ADA as the city is still in need of several facilities. At the same time projects are more easily recognized and appreciated by the public in comparison with planning that takes a long time to take effect. Even

though some of the projects are facing funding difficulties, the ADA uses all its means, mainly the support of the Chairman of the HC, to gain political support for projects. More funding will be available as the priority projects such as the DQ and the JPD are completed. The ADA has demonstrated that it is possible with careful planning, budgeting and contract administration, to develop outstanding projects that are less costly and more efficient than many other projects in the city. It has also elevated the level of public awareness towards planning, landscape and revival of traditional architecture.

### **Physical Planning And Urban Renewal**

The ADA regulates the new subdivision plans, which originally were prepared or supervised by the Municipality. These plans followed a standard prototype ignoring social and physical conditions. The ADA hopes to improve the style enforced by Doxiadis and consequently enhance the image of the city. In addition, the ADA prepares urban renewal plans for some of the old neighborhoods and villages that require attention. It aims to enhance their level of planning and quality of life.

### **Research And Studies**

The ADA conducts various studies that are beneficial for planning and development of the city. These studies include land use, socio-economic, market analysis and evaluation of information about the city. The ADA prepared the urban limits studies to control the development of the city. The ADA data base was compiled from the demographic, economic, transportation, household and land use surveys (DELTA) initially conducted in 1986. The data was then updated in 1990-91. Urban growth management plan and Riyadh Central Area Study are currently under the review of the Authority.

### **Utilities And Services Coordination**

ADA is the responsible agency in the city for coordination and provision of infrastructure. It opted to concentrate its efforts on services coordination to avoid confrontation or resistance from some of the service agencies. The ADA reviews the five year plans of infrastructure and services sectors to ensure proper distribution of services and coordination between the different agencies. It directs their plans and development stages to ensure that they comply with the urban limits. This will enable better management of services and the monitoring of land market and its effects on the growth of the city.

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### **Environmental Improvement And Protection**

Dynamic development in the last few decades ignored the natural features of the city. The ADA started efforts to preserve natural assets and traditional urban elements. Studies to preserve Wadi Hanifah and Thumamah are under way. The ADA is also concerned with the rising level of the ground water, to save and protect buildings and utilities from ground water damages and control the sources causing this problem. Future environmental studies planned by the ADA include; pollution, green cover and native fauna and flora.

### **Economic Development**

There were two driving forces for the growth of the Riyadh city. First is the transfer of government agencies from Makkah in 1955 and secondly the government spending during the boom period. In the absence of proper planning, the city is provided with more facilities than needed. After the economic boom, it was noticed that the city does not have a sustainable economic base. It primarily relied on construction and administrative activities. The ADA encourages and proposes means of participation by the private sector in developing an economic base for the city. The ADA formulated a strategy for the development of commercial and industrial base of the city. The strategy aims to attract activities benefiting from the locational advantage of the city centrality and a large service area. Based on the economic strategy, the ADA advises the private sector on the investment opportunities in the city and helps them to coordinate with other government agencies.

### **Revivification Of Cultural And Urban Heritage**

It is comprised of several elements. The development of Riyadh Public Park will provide a recreational, cultural and scientific facility for the city. The renovation of some of the older districts of the city such as Dirriyah and Manfouha will restore the city's urban heritage besides the improvement of the built environment. The incorporation of traditional building architecture and design motifs has been stressed in the planning and design of new development projects such as in the Justice Palace District, core area of Diplomatic Quarter, Ministry of Foreign Affairs' Housing, etc..

### **Urban Information System: A Vital Need**

The HC recognized information as a strategic input for planning, decision-making and city management. Accordingly, an information system for the city was



established in 1986 known as the Urban Intelligence Services (UIS). It is a multi-phased effort to develop strategic planning capabilities for the city and includes collection, assembly, processing, storage, maintenance, retrieval, dissemination and display of data and other planning information. Following are some of its salient functions:

- \* Describing the current state of the city in terms of its physical, social, and economic well-being;
- \* Forecasting the needs of the city;
- \* Managing city resources;
- \* Assessing the effectiveness of various projects and programmes;
- \* Prepare key indicators of change to alert the Decision-Makers in advance (pulse taking function);
- \* Evaluating the implementation of various policies and assess their impacts as a guide for the future actions (feedback and monitoring);
- \* Assisting in conducting strategic studies.

The UIS is centrally managed by a separate department in the authority that is carefully planned and comprehensively designed. The centralized management not only serves the entire organizational requirements but also addresses the needs of all level of management, to provide consistent information and to support all the business process of the organization besides eliminating redundancy and duplication of data collection efforts. UIS has the following capabilities:

1. GIS (Geographic Information System) is a decision support system that involves the integration of the spatially referenced data in a problem solving environment.
2. Spatial data based on the Aerial Survey of 1983 for the city and includes 100% land use information.
3. Graphic display and map production.
4. DBMS (Data Base Management System) that includes statistical data based on various sample surveys for the city such as household, land market, etc.
5. RTS2 (Riyadh Transportation Study Phase-2). It is a travel demand forecasting model based on EMME/2 transportation planning software package.

When the UIS was established, ADA embarked for the first time a number of comprehensive surveys for the city to build its database. ADA initiated its data collection programme known as DELTA (Demographic, Economic, Land Use, and Transportation Studies) that consisted of land use survey, land and rental market surveys, household survey, transportation survey and private establishment sur-

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veys. It took approximately eighteen months to complete these surveys and their respective analyses. This data, are used in generating land use plans, and to perform certain types of impact analysis based on the sophisticated GIS capability of the System. In 1990, the ADA, once again, conducted similar surveys not only to monitor city changes but also to rectify certain data deficiencies observed in 1986.

Today, the Authority has a comprehensive database for the city that provides significant input to the decision-making and policy formulation processes. This input takes the form of reports, recommendation, evaluations or other analysis which can be used to frame public policy. Besides supporting the ADA studies, various public agencies are taking equal advantage of this database. The data has not only made it possible to conduct major studies such as Wadi Hanifah Conservation Programme, Rising Ground Water Project, Urban Limits and Services Coordination, Traffic Demand Forecasting and Evaluation, Riyadh Central Area Study, Riyadh Market Study, the Justice Palace District Project, to mention a few, but it has also saved a substantial amount in data collection costs for the projects awarded to the consultants.

In spite of the above capabilities and contributions, UIS is still facing certain constraints which are technical, administrative and financial in nature. Technical constraints are multifold. First, historic and textual data could not be incorporated as an integral part of the system. Secondly, UIS lacks a multipurpose cadastre which is "a large-scale" community oriented resource information system. Henceforth, UIS is incapable to identify legal land-parcels and respective ownership. In fact it is an inherited problem because such a survey for the city has never been conducted. Thirdly, the issue of data quality control. This requires a permanent staff, with adequate training and verification of field surveys. But that causes a burden on the budget to keep such a fleet of field staff. Finally, UIS could not conduct one-to-one field survey except for land use. Hence, its entire non-spatial database is sampled and, therefore, that data cannot be linked to the spatial data. This deficiency, affects the UIS/GIS capabilities and hampers the process of developing planning models. Added to the above, there were certain problems in UIS graphic capability. This involved the defining of mixed-land uses and nested land uses. As a result, UIS could not produce an accurate land use map of 1986. This issue has been resolved, to a greater extent, in 1990 land use survey.

Administrative issues are concerned with automated-data-updating or effective data coordination. Problem occurs on traditional role of various public agencies that hold significant data. For example, building-permits and land-acquisition data lies with the Municipality of Riyadh, traffic-accident data with the traffic police, wire-n-pipe services data with the various public utilities agencies. Unfortunately,

all such data could not be added in the UIS due to the lack of effective coordination with such agencies. All the information that is necessary for effective planning exists but is largely inaccessible through the constraints of manual filing system. Should there be an effective data-coordination, it can be a good source for acquiring timely data inexpensively through the existing system already in operation within the city. This requires to take up this issue at a corporate level.

Financial issues involve allocation of required funds for collecting data on a regular basis, processing, printing, maintenance of collected records, and upgrading the system to accommodate changes due to advances in technology. This racing against the time put heavy expenditures and the economic justification of costs often faces limitations due to under utilization of the existing data and facilities already in place.

The ultimate objective of an information system i.e., it should be users' friendly poses a complex educational issue. First, it requires that each user should identify its needs. Secondly, it demands adequate training or computer literacy for the staff to understand the versatility, resources, operation and limitation of the system. The issue that is generally encountered is that users usually fail to identify their needs and consequently UIS fails to meet such requirements, when needed. Although ADA organizes various courses or training workshops on UIS, its effectiveness falls short due to changing staffing pattern in the Unit. Recently, UIS has developed an alternate strategy to provide "on-line help" to users.

## **Urban Planning Challenges In Saudi Arabia**

Even though modern planning established in the Kingdom and the country has achieved a marked progress in urban development, its structure is yet to be refined to respond to changes in the planning and management of community needs. The country experiences institutional and technical deficiencies at the national, regional and local levels and these deficiencies have impeded the planning process. Planning by its nature is future oriented and in the absence of long range perspective, the government organizations' plans and projects are still determined by the limits of the annual budgets and available funds. Even though the Ministry of Municipal and Rural Affairs was established in 1975 to achieve a national perspective of urbanization and to organize the physical planning process, in the absence of comprehensive urban development policy and strategy implementation, cities continued to grow haphazardly creating critical operational constraints in the provision of infrastructure and urban facilities. Besides, planning in the Country is concentrated at the national and local levels, disregarding the regional levels. Even though the current



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and the previous Five-year Development Plans have recognized the need for regional planning, they lack the institutional structure to implement regional plans.

These factors encouraged a short term 'project planning' approach, instead of conceptualizing 'planning' as a continuous process. The visibility character of project planning approach, is found more acceptable to decision makers. But one of the main limitations of this approach is the incremental and non-cohesive growth of cities.

Against this national background of local level institutional inadequacies, the High Commission, since the establishment of the ADA, effectively functions as an agency for comprehensive development of Riyadh and in the development of major projects such as the DQ and the JPD. It is the only agency in the Kingdom of its kind. Its establishment was a great opportunity for the city of Riyadh, which enjoys a better process of urban development and planning. Even though, scattered decrees and resolutions sometimes affects its functions, and hence it is necessary to institutionalize the procedures, the experiences of the HC and ADA are worth considering for other local bodies.

## **Scope Of Establishing Local Planning Authorities In Other Saudi Cities**

As mentioned above, almost all major urban projects, completed by the public agencies in the Kingdom, were achieved through an exceptional process that removed it from the conventional bureaucratic process. Development of the centres of the cities of Makkah and Madinah, the expansion of the two Holy Mosques, the international airports, the major industrial cities in Jubail and Yanbu, the Riyadh Diplomatic Quarter and the Justice Palace District were implemented through independent bodies. However, such projects in Saudi Arabia require the support of the highest authorities in the Kingdom. The political support needs to be supplemented by adequate technical and administrative capabilities. The HC, despite the political support could not be effective until the creation of the ADA. And the ADA, relying on the political support of the Chairman of the HC, managed to boost the development of the JPD despite the country's declining economy. Now, overtimes, ADA and HC has gained enough experience and expertise that can be extended for development of the other main cities in the Kingdom.

Even though each city is unique in its issues and development objectives, there exist certain common denominators amongst Saudi cities. For example, location of new land uses, urban growth management, revitalization of traditional city centres,



intensification of development, information management, setting up development objectives, policies and priorities and above all inducing the participation of private sector in urban development. These issues require more planning and management powers in the hands of local bodies than before. The role of local planning and management is now changing to a new central role i.e. to define the required return on investment prior to planning the level of services, type of land use to be accommodated to achieve economic efficiency and social justice. The local authorities should, therefore, address such changing perspectives besides taking advantage of experiences gained from ADA or large scale projects. Following is an outline of such a model to formulate 'Local Planning Authorities' for other Saudi cities.

First, The Ministry of Municipal and Rural Affairs should conduct a study to determine the cities that should have development authorities. It should also draft their mandate including their responsibilities, authorities and powers (Figure 53). It should define their relations with the regions' governors and the rest of the government agencies. Additionally, it should estimate the necessary preliminary funds for each development authority. The Minister may propose the presidents for these authorities who should be of the same rank as the city mayors. Consequently, a complete proposal should be submitted for the approval of the COM. The proposal should be flexible and empower the minister to add new cities in future or to take remedial measures as and when needed.

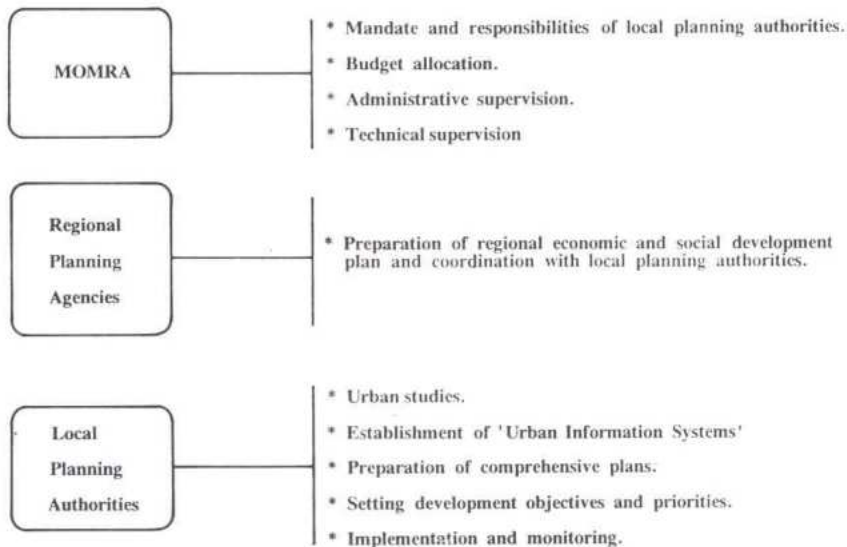


Figure 53: Administrative Role at Various Levels for Planning Authorities

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Such development authorities should be independent enough to perform the required professional tasks with least bureaucratic interferences. The scope and powers of the development authorities can be comparable to Singapore's URA taking into consideration the difference between government systems. It would rather be more appropriate that they should work directly under the control of MOMRA and work in technical advisory capacity with the city mayor (Figure 54). To avoid any conflict of interests, as experienced in the case of the ADA, these authorities should have a well-defined status in supervisory level over the rest of development agencies in the cities. Different from the ADA, these bodies should fall within the current government system. Instead of reporting to a region's governor they should report to the Minister of Municipal and Rural Affairs. However, the development authorities must maintain a mandate similar to ADA. They should have full authority and control of development without intrusions or interruption by other agencies. They will be responsible for the preparation of overall and annual development budgets. They must play a leading role in action area projects for the re-development of the city centres.

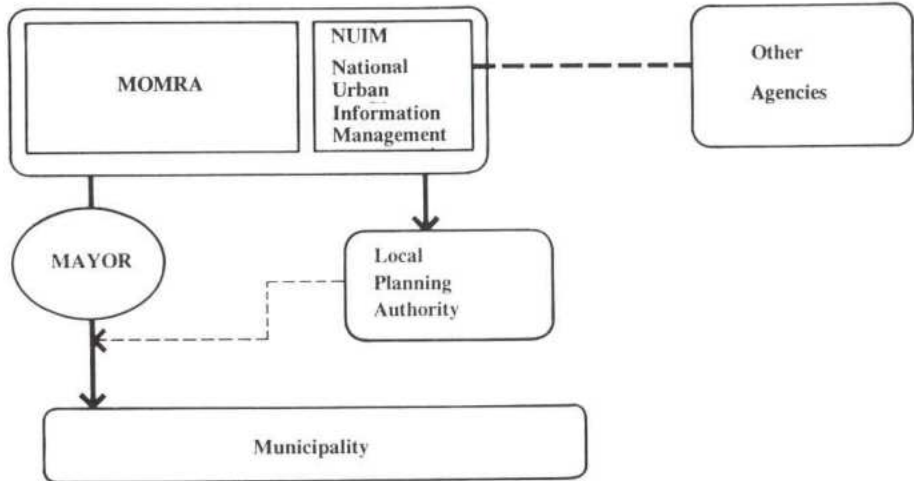


Figure 54: Planning Authorities in the Administrative Structure

Each authority should establish its own 'Urban Information System' to keep track of the city's development (Figure 55). Alternatively, MOMRA can establish a centralized 'National Urban Information Management' system for various cities. Regular statistical reports issued from such a system will help in keeping track of urban development performance and process in the Kingdom.

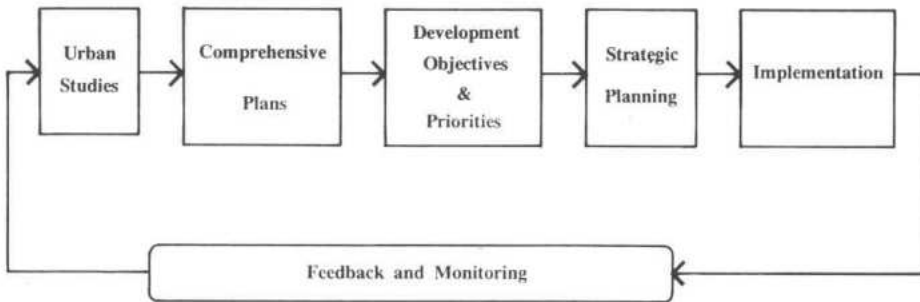


Figure 55: Functions of Planning Authorities

The proposed model, if put into practice, could help to overcome the institutional problems which are affecting the development of cities in Saudi Arabia. With this clearer mandate, the proposed development authorities should be able to direct and manage development in a more rational and efficient manner than has so far been possible. It is expected that a better process for planning in Saudi Arabia will be established achieving higher standards of planning, design and maintenance of the cities.

## Notes

- [1] I was assisted in editing this paper and in writing the section about the Urban Intelligence Service by Amjad Mushtaq.
- [2] The source of all statistics referred to in this document unless otherwise specified, is from the Arriyadh Development Authority. The main sources of the data are the Demographic, Economic, Land Use and Transportation Studies (DELTA), undertaken by the Arriyadh Development Authority in 1986 and the updates of the land use and households surveys conducted in 1990 and 1991.





# 13

## A National Spatial Strategy For Saudi Arabia

Mohamed AbdelRahman, Fadghoosh AlMuraikhi and Abdelaziz AlKhedheiri

There is an increasing conviction that in the wake of expanding population and rapid economic growth, urban growth does not take the way it should, providing a balanced development and promoting integration between parts of the national space. Almost every developed or developing country faces the problem of imbalanced spatial development with formidable metropolitan development problems and startling growth differences between growing and lagging regions.

Many countries have attempted to bring about sweeping changes in regional growth patterns. Examples include the United States which resorted to subsidies and internal improvements to develop its west. France has devised elaborate system of controls to change the patterns of growth in its expanding and declining regions. Mexico has also attempted to develop strategies as an approach towards integrating economic, social and physical development policies, for a balanced regional growth.

There are few countries in the world which have faced the tremendous impact of rapid development as Saudi Arabia, which is phenomenal not only as to the extent of development, but also as to the rapidity with which this development has taken place. Even though the government has acted in various ways to deal with the problems of rapid population growth, the scale and speed of development and urbanization necessitate a long term perspective of a possible spatial development strategy as a policy instrument to promote a balanced spatial development. This chapter tries to examine alternative possibilities for an acceptable national spatial development strategy that responds to the economic and social development objectives of the Kingdom.

### Urbanization Process

The Kingdom of Saudi Arabia covers a vast area, about 25% as large as the U.S.A. Its total inhabitants is close to 17 million. The country as a whole is thinly populated; large parts of it are empty. Saudi Arabia has an overall density of about 8 persons to the square kilometer.

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As in many other countries, the existing national settlement system in the Kingdom reflects the historical trends in population growth, natural and man-made resource development, physical features, climate and culture as modified by accumulated public policies and political processes.

The old pilgrimage and trade routes provided a basis for the establishment of urban settlements along the coasts of the Red Sea and the Arabian Gulf. Water resources in the inner parts of the country determined the spatial pattern of agricultural development and location of small villages. The discovery of oil in the late fifties provided development prospects for urban settlements in the east and along the Northern border. By 1950, the urban population of Saudi Arabia was only slightly more than half a million persons and the level of urbanization was only 15 percent. Around this period total number of recognized urban settlements did not exceed ten; and none of these urban settlements had reached 100,000. Makkah the largest city at that time, accounted for a total population of approximately 80,000. Other large cities at that time included Riyadh, Jeddah and Hufuf with a total population of approaching 30 thousand (Al-Khalifah, 1993:137-164).

### **Recent Urbanization Trends**

During the last twenty five years, the process of urbanization has progressed at an unprecedented rate, annual urban population growth rate during the period 1974-1992 amounted to 16.4 percent which was almost twice as high as the national population growth rate. The government role in manipulating this fast urbanization has been critical. The execution of the Five Year Development Plans since 1970 has resulted in a build-up of the national infrastructure (social and economic) at rates faster than has ever been originally conceived. This infrastructure became a strong locational factor pulling activities toward specific urban centres. In addition, the completion of a highly developed inter-regional road network rendered many of the tiny isolated urban settlements, especially in the sparsely populated parts of the north; central and south-west to major changes. Many of these settlements were functionally interdependent. The major expansion in the use of automobile and air transport continues to move many of the handicaps of distance for these settlements. Table 44 indicates that urban population has increased from 2.8 million in 1970 to 13 million in 1992. As a result, percentage of urban to total population had increased from 48.7 percent to 77.3 percent for the same period.

The present level of urbanization in the Kingdom is relatively very high if compared by other countries, a recent publication by the United Nations (Sly and Serrow, 1993: 1-37) reveals that the level of urbanization in the Kingdom which stands at 77.2 percent is even higher than the level of urbanization in the indus-

trialized countries. It is also evident from Table 45 that the level of urbanization in Saudi Arabia far exceeds the average level of urbanization in the Arab countries which amounted to 56.4 percent in 1990.

*Table 44*  
*Urbanization in the Kingdom Since 1950*

Year	Total Population	Total Urban	% of Urban to Total
1950	3,205	508	15.0
1960	4,075	1,211	29.7
1970	5,745	2,796	48.7
1975	7,252	4,255	58.7
1980	8,960	5,989	66.8
1985	10,823	7,899	73.0
1990	12,908	9,980	77.3
1992	16,930	13,069	77.2

*Source: 1) For 1950-1990 Figures: Al Khalifah, (1993:150)*  
*2) For 1992; C.D.S.,(1993)*

*Table 45*  
*Comparative Figures for Urbanization Levels 1990*

Country	Percentage of Urban to Total Population
Egypt	48.8
Syria	51.8
Saudi Arabia	77.2
Arab Countries (Average)	56.4
World (Average)	42.7
Industrialized Countries	72.7
Developing Countries	33.9

*Source: SlyD and Serrow W, (1993: 1-37)*

## A National Spatial Strategy

### The Settlement Pattern

There seems to be a contrast between the patterns of urban and rural settlements in the Kingdom. The rural settlements which amount to 10,365 villages are unevenly distributed; about three quarters of the villages are located in the south-western *Emirates* of Makkah, Asir, Al-Baha and Jizan. On the contrary, the urban settlement pattern is more evenly distributed on the national space. Table 46 indicates that the number of urban settlements in excess of 10,000 population amounts to 106 in 1992. There is also 18 urban centres in excess of 100 thousand each.

Table 46  
*The Change in the Distribution of Urban Settlements According to Size (size in thousands)*

Year	Number of Urban Settlements				Total
	10 to < 100	100 to < 500	500 to < 1,000	Over One Million	
1940	10	-	-	-	10
1974	82	9	2	-	93
1987	88	9	1	2 <sup>(*)</sup>	100
1992	88	13	2	2 <sup>(*)</sup>	108

Note: (\*) Number of Urban Centres in the range of 1 Ml. and above becomes 3 if the Metropolitan Area of Damman with 1,224,285 population is considered as a settlement.

Sources: 1) 1940-1987 Figures: *Al Khalifah* (1993: 153).  
2) 1992 Figures: *C.D.S.* (1993).

The majority of urban settlements of the Kingdom are distributed within three large areas: the western belt (from Najran and Jizan up to Madinah), the Central belt (from Riyadh to Hail), and the eastern belt (from Hufuf to Jubail); these three large areas accommodate 90% of the national urban population (Table 1 and Figure 56).

Within these urban settlements there are two cities in excess of one million, fourteen cities in the range of 100,001 to 500,000, and thirteen cities are in the range of 50,001 to 100,000. In addition, there are nineteen cities in the range of 25,001 to 50,000, fifty eight cities in the range of 10,001 to 25,000 and seventy one



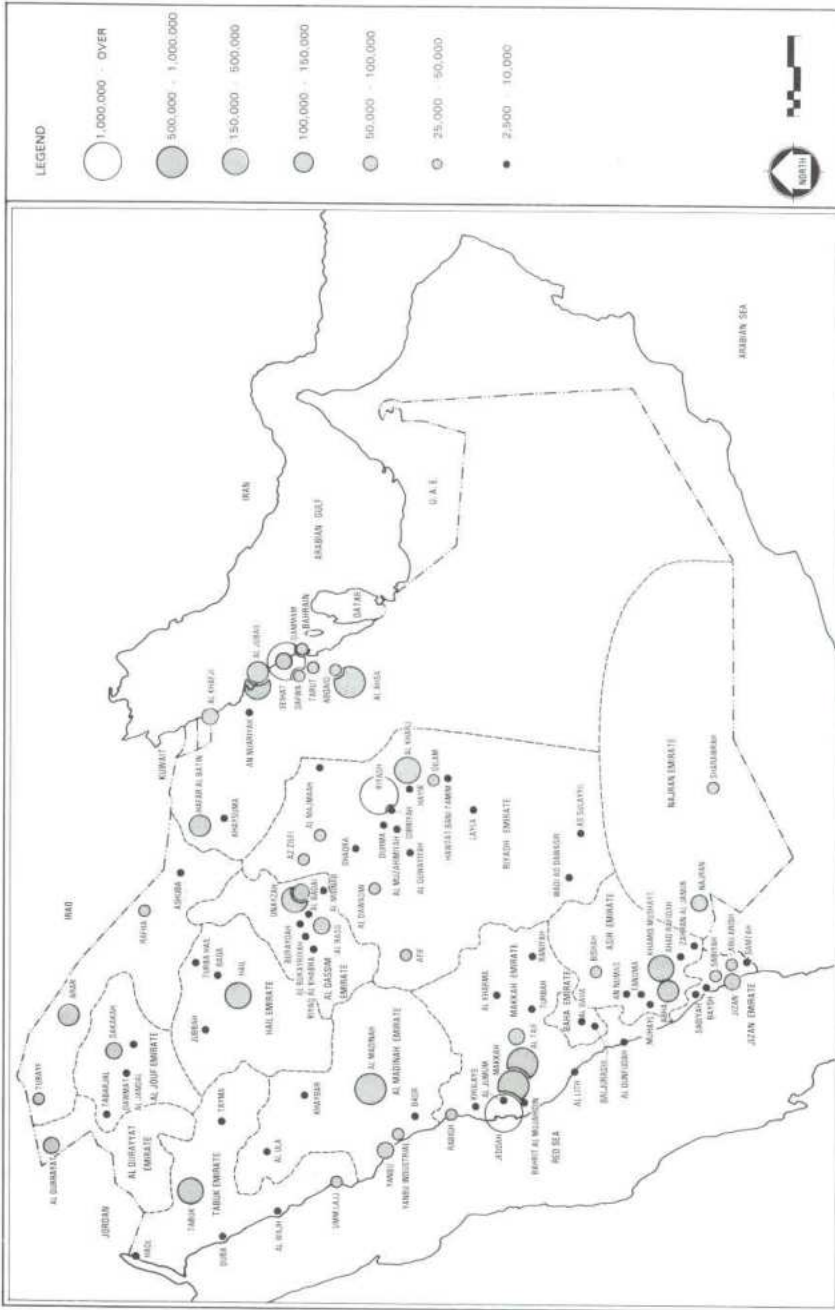


Figure 56: Spatial Distribution of Urban Settlements According to Population Size (1992).

## ***A National Spatial Strategy***

cities in the range of 5,001 to 10,000. Therefore, it seems that the urban system in Saudi Arabia is not too biased in favor of one or two cities and the country has the opportunity to identify and invest in selected urban areas to realize the national spatial development objectives.

The picture is quite different at the regional levels. There seems to be a high degree of primacy in many regions. For example, the capital city of Riyadh captures 80 percent of the total population of its region (for all settlements exceeding 2,400), and it is also 18 times larger than the second largest city in its region. Similarly, the city of Hail captures 82 percent of its region's total population and it is 22 times larger than the second largest city in its region. Preliminary results of the 1992 population census reveals that five major cities account for almost 64 percent of total population in all urban settlements of ten thousand or more. These cities include Riyadh with a total population of 2.8 million, Jeddah with a total population of 2.1 million; Dammam Metropolitan Area with a total population of 1.2 million; and the two holy cities of Makkah and Madinah with total population of 966 and 608 thousand respectively (C.D.S., 1993).

### **The Need For A National Spatial Strategy**

The need for a National Spatial Strategy for the Kingdom of Saudi Arabia is especially important for several reasons:

First, urbanization in the Kingdom has been very rapid and continues to expand at rates much higher than the national population growth rate, which is an indication that rural to urban migration has been a strong force behind this urban growth. The implications of this continuous growth of the Kingdom's urban population and the preference by the people to live in large urban centres are quite serious. The large urban centres may double in size prior to the year 2010, which will definitely complicate the task of promoting balanced development and will have serious impacts on the environment and the quality of life. Riyadh and Jeddah are already showing signs of deterioration in terms of traffic congestion and air pollution.

Second, in the absence of a clear long term spatial policy, large urban centres may continue to grow at the expense of the medium and smaller urban centres, and in a country as large as the Kingdom with very low density, this will become a serious national security concern.

Third, until now, negative externalities of fast urbanization in the form of congestion, pollution, crime and other adverse environmental impacts are only bearable.

The continuous expansion in the size of large Saudi cities may confront with the same range of problems that large cities as Cairo, Bangkok, Jakarta or New York are currently facing; mainly high crime rates and the continuous increase in the social cost of job creation and provision of socio-economic infrastructure. Recent estimates indicate that the cost of building a new inner city motor way in Riyadh parallel to an existing one would cost three times the initial cost of the existing one.

Fourth, one of the strategic objectives of national development in the Kingdom is the promotion of more inter-personal equitable distribution of services and economic activities. In a free enterprise economy, this objective may be difficult to realize in the absence of a long term National Spatial Strategy that establishes the guidelines for the coordination of sectoral development policies on the national space as to target special areas. In addition, promotion of a more equitable inter-regional and inter-personal distribution of services and economic activities would require directing greater emphasis toward the development of secondary cities and rural areas through direct government intervention in the spontaneous development process of these areas. To illustrate the importance of these cities in the national setting, it is worth noting that these urban centres with a population size ranging between 2,400 and 100,000 which amount to 323 urban centres are catering to the needs of a total population of 7.3 million, mostly Saudis, of which 3.4 million are residing in these cities and the remaining 3.9 million are the rural population (C.D.S., 1993).

### **The Objectives Of National Spatial Strategy**

A National Spatial Strategy is a policy statement that defines the broad guidelines for spatial development according to national policy directions. It establishes a framework of spatial coherence allowing for the coordination on spatial level of policies relevant to various development sectors and different parts of the national space. By doing so, it ensures the integration of human settlements planning into the macro socio-economic planning.

A challenge in designing any National Spatial Strategy is that their goals are frequently unclear. The goals of a National Spatial Strategy are not different from the goals of macro and sectoral policies, e.g. efficiency, equity, environmental quality, national integration and security (Richardson, 1982: 98-101). A World Bank study states that a National Urbanization Strategy of a developing country always has multiple objectives. These objectives, which are not ends in themselves, but are means to achieving the general aims of the society as long term sustainable growth and satisfying basic needs may include (Renaud, 1981: 98-101):

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- i) The integration of peripheral regions to increase the size of the national domestic market;
- ii) Opening up of new resource areas to raise national output;
- iii) Reduction of inter-regional disparities;
- iv) Rapid development of border regions for reasons of national security;
- v) Improvement of the national system of cities because of its dominant role in the transmission of economic impulses and diffusion of innovations.

In proposing a Spatial Strategy for the Kingdom, two major policy areas affecting the patterns of population and settlement distribution will be discussed:

- \* Alternative strategies to deal with the continuous polarization of activities and the concentration of population in a few urban centres, mainly Riyadh, Jeddah, and Dammam.
- \* Problems of regional inequality and the direct policy instruments for the redistribution of economic activities.

### **Spatial Development Considerations In The National Plans**

In the early stages of development, spatial concerns are often overlooked in meeting the immediate demands of national development and in responding to the opportunities offered by sectoral development. As a result, national plans, often leave out the inter-relationship of developments in regions and localities. In the case of the Kingdom, the major efforts to modernize the country since 1970 have resulted in the allocation of significant resources to planning the sectoral development. Due to the experienced rapid pace of modernization, regional disparities became apparent and the need for spatial perspective in the development process became essential.

To overcome these regional disparities, spatial considerations were introduced in the national policy schemes since the third five year national development plan.

The Third Development Plan (Ministry of Planning, 1980: 107-109) established the first essential spatial development guidelines which included:

- \* The dispersal of economic activities, where feasible and efficient, so as to avoid over concentration of economic activities in a few urban centres.
- \* The designation and preparation of development areas as growth poles in areas with strong potential, thus strengthening the economic base of the regions by diversifying their production sectors.
- \* The creation of a hierarchical system of development service centres spread out to the district and regional levels so as to provide the specialized services



needed for stimulating regional growth.

- \* The extension of the village cluster program so as to provide municipal services to the rural population in a cost-effective manner.
- \* The coordination among central and local branches of Ministries and Development Agencies responsible for the planning and implementation of projects that have regional consequences to reduce the conflicts between achieving the national higher growth rate and reducing inter-regional disparities.

The Fourth Development Plan (1985-1990) recognizes that regional disparities have been caused not only by natural resource imbalances, but also by the pace of development; by rural to urban migration flows and by cost considerations. The Plan also considers regional planning as one of the most effective instruments in minimizing the implications of friction due to conflicts in pursuing efficiency which can be realized through spatial concentration of activities, and promoting more equitable distribution of development opportunities on the national space. Achieving efficiency through spatial concentration of investment may contribute to regional imbalances. The plan highlighted the spatial consideration in national development by emphasizing the continuation of fundamental structural changes in the Kingdom's economy through: (Ministry of Planning, 1985: 419-425)

- \* Pursuing balanced development in all regions.
- \* Proceeding with the economic diversification of the regions in accordance with their productive potential and requirements.
- \* Strengthening the coordination between executing agencies at the regional level and enhancing efficiency in the provision of services.

The Fifth Development Plan places special emphasis on the regional aspect of planning in particular the promotion of balanced regional development (Ministry of Planning, 1990: 367-370). The plan considers regional planning as a mean of coordinating sectoral development efforts by reinforcing the spatial linkages and functional interactions between sectors. The plan also calls for the full utilization of existing facilities and services.

## **Alternative Spatial Development Strategies**

Taking into account the recent spatial development considerations which establishes the objectives of a long term national spatial strategy, in this section, alternative options are presented. Each alternative is based on different policy consideration and existing realities. Although there are many hypothetical strategies that could count as spatial development strategies, it is easy to demonstrate that the feasible options available for the Kingdom are limited. This can be shown by brief-

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ly examining some of the more obvious spatial development strategy alternatives.

### **Alternative 1: Absorptive Capacity Improvement**

This Spatial Development Strategy concept is of special importance to Saudi Arabia. If current high population growth rates continues, total national population may double by the year 2010 and urban population would reach 27 million. It would surely be efficient to accommodate reasonable percentage of this expected increase in urban population within the existing urban settlement structure, especially within those urban centres found to have definite excess capacity in infrastructure and underutilized serviced land. A recent study conducted by the Ministry of Municipal and Rural Affairs, DMTP (1989) to delineate urban growth limits revealed that a high percentage of the urban underutilized serviced land exist in the large urban centres of Riyadh, Jeddah, Madinah, and Dammam, whereas cities located in agricultural areas, especially in the south-west and the north, have relatively less underutilized serviced land. This is mainly due to the nature of a more compact urban development to conserve arable land (Al-Hathloul and Abdel Rahman, 1989). Adopting policies of urban infill for the efficient use of the excess capacity in urban infrastructure in large cities could be used to satisfy urban land requirements for the potential increase in urban population and substantially promote a much more compact pattern of urban development. However, further concentration of investment in the large urban centres at the expense of other cities - although may be justified on efficiency grounds - may further escalate inter-regional disparities and would probably accelerate migration toward these large cities.

### **Alternative 2: Intra-Regional Deconcentration:**

As long as large urban centres continue to grow, the problems facing these cities usually become more complex and the identification of viable approaches to deal with these complex problems becomes equally difficult. Until recently, the standard prescription for dealing with the continuous growth and over-concentration of population in few cities came in the form of policies based on decentralization. Development programs were designed to limit large cities' growth and to deflect potential employment away toward newly built cities. This form of decentralization derived political support from popular beliefs that national capitals were simply too big; it also derived theoretical support from academic beliefs concerning optimal city size (Derwent, 1975: 547-548).

One of the basic dilemma facing planners with respect to decisions regarding the selection of the location of these newly built cities in urban regions is that building these new towns in nearby locations from the primate cities as to relieve their

congestion and to benefit from their economies of scale usually result in the merging of these new towns into the primate city, thus exasperating primate city problems in the long run.

This strategy was pursued by the French Government. The purpose was to deflect population and employment away from Paris in its immediate regions for satisfying locational and proximity preferences. This dispersal strategy featured the deployment of a green belt and five new towns from the urban core of the Paris region. The strategy was also considered by the Egyptian Government during the 1980's and was implemented in Cairo region, where the new satellite communities of 15 May, 10 Ramadan, 6 October and El Obour are the virtual equivalents of the new towns around Paris both in terms of their population targets and in terms of commuting distance from the primate cities (PADCO, 1981).

This strategy may be relevant only to Riyadh region, as stated earlier, total population of the city of Riyadh amounts to 81% of the total population of all urban settlements in its region, and if the population continues to grow at its past trend, Riyadh city population may surpass the 8 million mark by the year 2020. Building new communities in a polycentric system around Riyadh may deflect the population away from Riyadh but this will definitely be at the expense of the development opportunities of other already existing medium and small urban settlements in its region. It is equally clear that this strategy will not be adequate to resolve the fundamental problems of reducing inter-regional disparities and the rapid development of the border regions.

### **Alternative 3: Inter-Regional Decentralization Through Growth Centre and Counter-magnet Emphasis**

Inter-regional decentralization as a National Spatial Strategy concept usually try to seek solutions to the unbalanced distribution of population throughout the national "system of cities." It calls for government to allocate substantial investments for the purpose of inducing agglomeration economies in a number of urban centres. This notion is based upon the idea that the spatial concentration of propulsive industries in or near a large urban centre can generate a quantum jump in economic development with the possibility of later diffusion of growth impulses out of the centre into the surrounding hinterland (Hirschman, 1970: 105-120). Pursuing the growth centre approach as a National Spatial Development Strategy option would favor on efficiency grounds, the selection of centres which are relatively large and have already experienced fast growth in the past. Although this option may promote a better distribution of population among regions, favoring the most fast growing urban centres in each region may encourage migration toward these cen-



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tres from smaller cities and rural areas thus aggravating intra-regional imbalances. Whether such concept alone is adequate to assist in achieving national development objectives such as the promotion of balanced development and the development of frontier regions of the Kingdom is highly questionable. The ten large urban centres of the Kingdom account for 77% of total urban population and they are highly concentrated in three areas along a central east-west axis, this include the urban network of Jeddah-Makkah-Taif in the west Riyadh - Al Kharj in the central part and the Dammam Metropolitan area in the east. Once these relatively large urban centres are excluded, other settlements officially classified as urban centres and widely dispersed over the national space would appear to be too small in terms of their population size and economic base to justify the introduction of concentrated lumpy investments over a long period of time. In addition, within these small urban centres, there is no obvious choice for a location of major industrial complexes.

The countermagnet concept is to introduce polarized development in the form of either a new or existing major city/cities at a considerable distance from the primate city to compete with it as an attractor to population. This concept has been implemented in the form of large new towns in many countries either to meet the growing challenge of depressed regions or to curb the uncontrolled growth of metropolitan centres and to influence the future pattern of spatial development. For example, in Venezuela, in the late sixties the government created the new urban countermagnet of Cividad Guayana for the purpose of developing the poverty stricken south-west region and diverting growth away from the capital city Caracas. Other examples include the cities of Brasilia in Brazil; Canbera in Australia and Sadat city in Egypt.

Examining the spatial pattern of urban development in the Kingdom reveals that the central part of the Kingdom which consists of Riyadh, Qassim and Hail provinces could very well use another major city. The total population of Riyadh city is eleven times larger than the size of Buraidah, the second largest urban centre in the entire Central part of the Kingdom and it is sixteen times larger than the city of Hail. A countermagnet candidate in this central part would be the urban triangle of Buraidah - Unayzah - Al Ras with a total population of almost four hundred thousand. This urban triangle is at considerable distance from Riyadh, (400 Km.), and it has major medical, educational and trade facilities. It is also centrally located in the agricultural heartland of the Kingdom. As for the south-west the twin cities of Abha - Khamis Mushayt with a total population of 330,000 could be another candidate. In the north there is the city of Tabuk with a total population close to 300,000. The applicability of this concept however, makes it a very restricted form of decentralization and can only serve as a partial strategy. Devoting long term commitment of extensive resources to one or two urban settlements as counter-



magnet is a fact that endows this option with the lowest equity rating of all spatial development strategies.

#### **Alternative 4: Promoting Secondary Cities Within Potential Development Corridors**

Given the nature of the urban hierarchy in the Kingdom with a widely scattered medium and small urban settlements (population size in the range of 5 to less than 100 thousand), which amounts to 159 centres, it would then appear that any Spatial Development Strategy that responds to the development needs of the lagging areas in the north and south-west and aims at promoting a better integration between different parts of the vast national space must intervene in the spontaneous process of polarization. The secondary cities strategy focuses on the lower medium and end of the national settlement hierarchy by improving the internal conditions of the medium and small size cities with the primary objective of enhancing development opportunities in areas away from large urban centres. Thus, it is a strategy that can be used for pursuing regional economic development, especially within areas which have sufficient resources capable of being developed, and in promoting greater social equity.

The Kingdom's enthusiasm for opening up new areas for agricultural development and diversifying the economic base of its regions warrant serious consideration of this strategy. Efforts to improve the development opportunities of secondary cities will require not only the provision of better roads, sewerage, housing, health facilities, vocational training... etc., but also resource allocation through packages of incentives and subsidies to expand the economic base of these cities. This is mainly because out migration from these cities to large urban areas is largely based on employment expectations. Investments in the infrastructure of these cities is not expected, by itself, to be powerful enough to steer development away from the large urban areas.

The argument in favor of secondary cities (medium and small size) stems from the following considerations:

- i) Large urban settlements may provide excellent locations for consumer oriented activities and high technology investments, but these activities are only a small part of the investments needed to promote sustained economic development. On the contrary, a wide range of processing, commercial, service and small-scale manufacturing activities can flourish in intermediate and small cities.
- ii) In most developing countries, there is a considerable need for lower order

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urban centres to create a more equitable pattern of development. Recent research and experience in developing countries emphasizes the potential advantage of small and medium size urban settlements. They act as market places, service, commercial, transport, distribution and communication centres and as centres of small-scale manufacturing, and in stimulating rural development and integrating urban and rural economies.

Rondinelli (1984: 10-48) has argued from empirical as well as theoretical bases that small towns and cities are crucial for stimulating the development of rural areas... They organize the economies of their hinterland, provide access for rural people to basic services and facilities, provide access to transportation and communications networks, offer off-farm employment opportunities and provide access to markets, services and facilities in larger towns and cities.

In a study for the World Bank, Richardson (1977: 11) argues that the development of lower order centres can promote more equitable economic growth within and among rural regions, aside from whatever impact it has on slowing the growth of the largest urban areas. These benefits include commercialization of agriculture, provision of better services to residents of rural regions, national spatial integration, diffusion of social and technical innovations from major metropolitan areas, and the decentralization of job opportunities.

One of the basic problems in promoting development within medium and small urban centres is the overwhelming dominance of large urban centres on areas within their respective sphere of influence. Getting away from the dominance of large urban centres may confine the selection of individual secondary cities to areas far away from the major urban centres. Such as the north and the south. These urban centres may have limited viability if developed on their own.

To compensate for the limited viability of individual secondary (medium and small) cities if developed separately, cluster of cities can be mutually promoted. Targeting a cluster of cities at once within a defined spatial setting can create mutually supporting cities. If the targeted cluster of cities are along inter-city transport access, they can act as nodal points transmitting development impulses within a larger development corridors. A World Bank Study indicates that a spatial strategy that can emphasize intermediate - size cities (scaled according to each country) and major transport corridors will be building from a position of strength (Renaud, 1981: 73,131).

The notion of development corridors is a further development of the centre periphery model developed by Friedman and Sullivan (1978: 497). This model tries

to get away from the reliance on big urban centres for reducing inter-regional disparities. It takes into account the rural problems of special development, especially the inter-linkages between rural and urban areas, which have proved that because of the strong back-wash effects directing development to a single well endowed urban centre in a peripheral area usually comes at the expense of its surrounding areas. Therefore, promoting secondary cities, medium and small within development corridors represent a middle ground between extreme settlement strategies mainly those favoring the largest metropolitan centres as optimal locations for investment on one side and those calling for extensive focus on rural districts and villages alone (the agropolitan development strategy).

Examining the spatial pattern of urban development in the Kingdom reveals that there are strong possibilities for enforcing development within development corridors in the near future. At present, development corridors are emerging in three locations: (i) in the central part between the capital city of Riyadh and Buraidah, the Capital of Qassim province (ii) in the western part between the major cities of Jeddah, Makkah and Taif (iii) in the eastern part along the Arabian Gulf between Dammam metropolitan area and the industrial city of Jubail in the north. Possibilities also exist for establishing development corridors in the long run within the following areas: (i) along the northern border, (ii) along the Red Sea Coastal Strip from Jeddah to Jizan in the south-west, and (iii) from Jeddah to Najran along the mountainous areas. The mutual promotion of cluster of secondary cities within these potential development corridors can definitely influence the distribution of population and resources away from its present highly skewed pattern toward a more diffused pattern. This in turn will accelerate the process of integration between urban and rural economies.

## **The Strategy Choice**

The above review suggests that options available to formulate a comprehensive national spatial strategy are limited. Many of the presented alternatives have been partial in the sense that they have included only components of a national strategy. For example, it is not enough to have a spatial strategy to deflect population and job opportunities away from major cities, nor obvious partial strategies to build new towns or to promote border regions. Moreover, a spatial strategy does not mean an urban bias. Full potential of urban centres, especially those spread widely in the agricultural areas of Qassim, Hail, Jizan, Najran, Tabuk and Al-Baha regions could only be realized by going outside the urban nucleus itself and developing the natural resources in the surrounding areas on which these urban centres' growth depend. A World Bank Report indicates that it is a counterproductive assumption that an



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urban development strategy must be anti-rural or at least damaging to rural interests; this would be a very unfortunate point of departure for policy formulation because rural and urban areas can interact very positively (Renaud, 1981: 497).<sup>[1]</sup>

### **The Context For Strategy Choice**

The absence of an identifiable set of guidelines for the formulation of any National Spatial Strategy represents a challenge. It is also impossible to formulate such a strategy that will simultaneously satisfy everyone's sense of priorities. Even good strategies may and usually do have some adverse consequences. As a result, policy makers must accept trade-offs because realization of different objectives usually result in competition on the use of resources. Also, policies to implement some good strategies may require the postponement of other good policies. Thus, for a National Spatial Strategy to be sensible, it must take into account the realities of recent development trends, government commitments, and experience of other countries. Major challenges which stem from the development realities and government commitments in the Kingdom and must be kept in mind while proposing a National Spatial Strategy include:

- a) Investment over the last twenty years in infrastructure, human capital, institution building, and many other aspects of development has led the Kingdom to a point where the fundamentals of a national settlement system has been defined. In addition, the distribution of development potential, and the irrevocable commitment of resources already made in the Kingdom engender a very powerful development dynamic which will certainly limit the choices in proposing a spatial strategy. For example, the existing urban concentrations have reached a point of sustained development, and will continue to grow. Their growth rates can only be reduced slowly and over along period of time.
- b) The transport networks in the Kingdom covers the entire country rather evenly. It provides adequate lateral transport between most of the urban centres. The main effect of the Kingdom's modern transport technologies, mainly its expressway network, has been to increase enormously the comparative advantage of locations served by these centres. This transportation network has extended the size of markets and conferred substantial advantages upon large urban centres such as Riyadh, Jeddah, Makkah, Taif, Buraidah, Dammam, and Al Khobar. These urban centres are relatively well serviced by infrastructure and their comparative advantages cannot be overcast in proposing the National Spatial Strategy. Any Spatial Development Strategy that aims at favoring the medium and small size cities in the north and south at the expense of these major urban centres must be preferred on redistribution criteria.



- ia, and may well be at the expense of hindering national economic performance.
- c) Continuation of the current growth rate of large urban centres at the expense of small and medium size urban centre is likely to lead to undesirable urban growth pattern; increase the amount of unplanned urban infrastructure; use of more public resources than necessary and widening inter-regional disparities.
  - d) The existing settlement structure and area characteristics in the Kingdom present an urgent need for increased cohesion of the national space. The Kingdom's population size is limited if compared with its vast space. The populated areas are separated by long distances and each areas has shown specific characteristics over time. Although the development features of each area and the functional linkages between areas have been changing, accelerating the process of integrating parts of national space still requires the continuation of deliberate government policies.
  - e) National defense priorities have provided an economic base of particular importance for many of the urban centres, especially in the frontier provinces. This, in turn, has a strong influence of the spatial strategy options.
  - f) The Kingdom has a fundamental commitment to a mixed enterprise system, with a large increasing role to a vibrant private sector. The private sector operates in a context created by the development initiated and controlled by the government.
  - g) The distribution of resources, people and the topography of the land will continue to impose considerable constraints on the occupancy and the use of some parts of the national space. Examples include the vast desert areas in the south-east (the empty quarter).
  - h) With the high level of urbanization in the Kingdom which currently stands at 77% of total population, urban growth will continue, the government is committed to provide rural areas with adequate facilities to be ranked as urban. As a result, future population movements will be mostly city-to-city rather than rural to urban population movements. This would signal the strong need for a spatial strategy that focuses on inter-urban mobility, i.e., a spatial strategy that help intermediate and small cities to contain their current and future population growth.
  - i) The remarkable improvements in the social and municipal services of many of

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the small and medium size cities will improve their growth potential and expand their population absorption capacity. The completion of a highly developed inter-regional road network will continue to bring major changes to many of these medium and small urban settlements, especially those located in the sparsely populated areas of the north, the centre and south-west. The major expansion in the use of automobiles and air transport will continue to remove many of the handicaps of distance for these urban centres and bring them into the web of interdependence. Development inducements by the government could help these cities in retaining their own population.

- j) The completion and operation of the two industrial cities of Jubail and Yanbu represent a major departure from the traditional industrial locational pattern which favored the major urban centres of Jeddah, Dammam, Riyadh and their adjacent areas. The promotion of capital intensive petro-chemical industries in these industrial cities will influence prospects for future development in many closeby areas. The forward linkages of these industries, coupled with the continuous improvements of the road network, will render some of the current small urban centres in adjacent areas as potential feasible locations for the establishment of downstream small scale industries.

### **The Proposed Strategy**

From the preceding analysis, it appears that the use of a multiple-strategy approach is necessary because no single strategy has yet been identified which at once satisfies all of the major goals of society. This is due chiefly to the fact that spatial development strategies in general are essentially population redistribution strategies implemented by shifts in the spatial distribution of investment and employment. Towards attaining the goal of economic efficiency, some strategies require relatively concentrated distribution of urban development; in pursuit of the inter-regional equity goal, other strategies would require relatively dispersed spatial development. Thus, a universal technical solution would only exist if (i) all nations experience the same kind of spatial and urban problems, and if (ii) governments sought only to promote a single social objective. Because the world is far more complex, all well-articulated national spatial and urban strategies are multi-strategic in content (Richardson, 1983).

The problem is to find that combination of a spatial development strategies which respond to the settlements problems of unique nature to the Kingdom, such as the underutilization of urban infrastructure and which best satisfy the Kingdom's multiple goals of achieving a spatially balanced development by reducing inter-regional disparities, promoting a better integration between parts of the national

space and accelerating the development of the border areas for security reasons. Because these societal goals are competing goals, any given combination of a strategy will necessarily involve compromise in the form of basic trade-offs between economic efficiency and inter-regional equity. The most relevant urban development strategy for the Kingdom should be based on two essential foundations:

- a) Reaping the benefits of the already fast growing urban centres where a high percentage of urban population reside, especially, the major urban areas of Riyadh, Jeddah, Makkah, Taif, Dammam, and Al Khobar.
- b) Accelerating the process of reducing inter-regional disparities, by promoting a balanced growth throughout all regions of the Kingdom. Besides, achieving balanced growth represents one of the main strategic objectives of the Fifth Development Plan (Ministry of Planning, 1990:46). Based on the preceding analysis of alternative strategies, existing realities, and national goals, the elements of the proposed strategy include:

#### ***Improving the Absorptive Capacity of Major Urban Centers***

The efficient use of infrastructure already in place would call for improving the absorptive capacities of urban centres. Regulations to promote compact physical development through urban infill need to be enforced. A recent study by the Arriyadh Development Authority (ADA) reveals that enforcing the defined urban growth limits for the city of Riyadh has been very successful in improving the city's absorptive capacity. Between 1986 and 1993, the rate at which serviced vacant land has been brought to use is very encouraging. On an average 11.5 kilometers of vacant serviced land was brought to full use annually and vacant land serviced with infrastructure has declined from 329 to 248 square kilometers. As a result, number of newly built dwelling units within the first phase of urban growth limits amounted to 69,026 units as compared to only 1,000 dwelling units built beyond these growth limits (Arriyadh Development Authority, 1993).

#### ***Capitalizing on the Economic Potentials of Provincial Capitals***

At present, most of the higher order functions such as universities, research institutions, finance and highly specialized medical facilities are concentrated in few urban centres. Provision of such new facilities away from major urban centres in provincial capital with adequate population size would definitely encourage national professionals to reside in these cities and will contribute to development of research. This in turn, will make these places more attractive to the location of related activities. The dynamism of development will help generate high paid jobs and



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promote a better order in the hierarchy of services and the spatial distribution of population.

### *Strengthening the Functional and Production Linkages Between Fast Growing Urban Networks and Peripheral Areas*

For the Spatial Development Strategy to be efficiency-equity compatible, it must aim at harnessing the positive aspects of the fast growing urban areas to gradually benefit adjacent lagging areas which possess development potentials. To help accelerate this process, internal efficiency of secondary cities in closeby areas needs to be upgraded. In order to compensate for the limited viability of secondary cities if developed separately a cluster of cities where investment will have multiplier effect on improving the economic base in surrounding areas can be targeted at once. As stated earlier, this process can create mutually supporting cities within spatially defined potential development corridors.

A recent study by the Deputy Ministry for Town Planning, MOMRA (1990) analyzed the existing pattern of spatial development and revealed that development corridors with diversified mix of activities can be promoted. Concerted development efforts through the injection of development ingredients with identified urban nodal points along these corridors can round themselves out to speed up the integration process between the growing urban areas and their adjacent lagging ones. The advanced inter-regional road network will definitely facilitate this process.

The most promising development corridors in the short run include: A development corridor extending from Jubail north to Hufuf south within this area necessary ingredients for further development exist, they include the centrality of Dammam Metropolitan Area with its diversified functions; the large industrial base in Jubail with its potential down stream effects, possibilities for further agricultural development potential in and around Qatif and Hufuf will definitely soften the development predicted for this corridor which is biased toward urban structure and industrial activities. Similarly, there is a strong possibility for a development corridor between Riyadh to Hail; within this area, better integration can take place between the industrial; trade, research and finance activities located in Riyadh and the agricultural development potentials in Qassim and Hail regions. This integration process can be accelerated if secondary cities located within this corridor are treated as anchor points and targeted for improvement of their infrastructure and incentives are established to attract private investors.

In the western part of the Kingdom, the most obvious development corridor exist between Jeddah, Yanbu and Madinah. Development in activities related pil-



grimage and visits to the holy cities will take place along this corridor. In addition, industrial development within Yanbu can further support diversification in the economic base of the Madinah-Yanbu area. Capitalizing on the industrial development currently taking place at Yanbu would require a development program to improve the physical features and the infrastructure facilities of medium and small urban centres along the northern Red Sea coastal area to become more attractive to private industrial investors, thus, benefiting from the down-stream effects of the industrial growth at Yanbu.

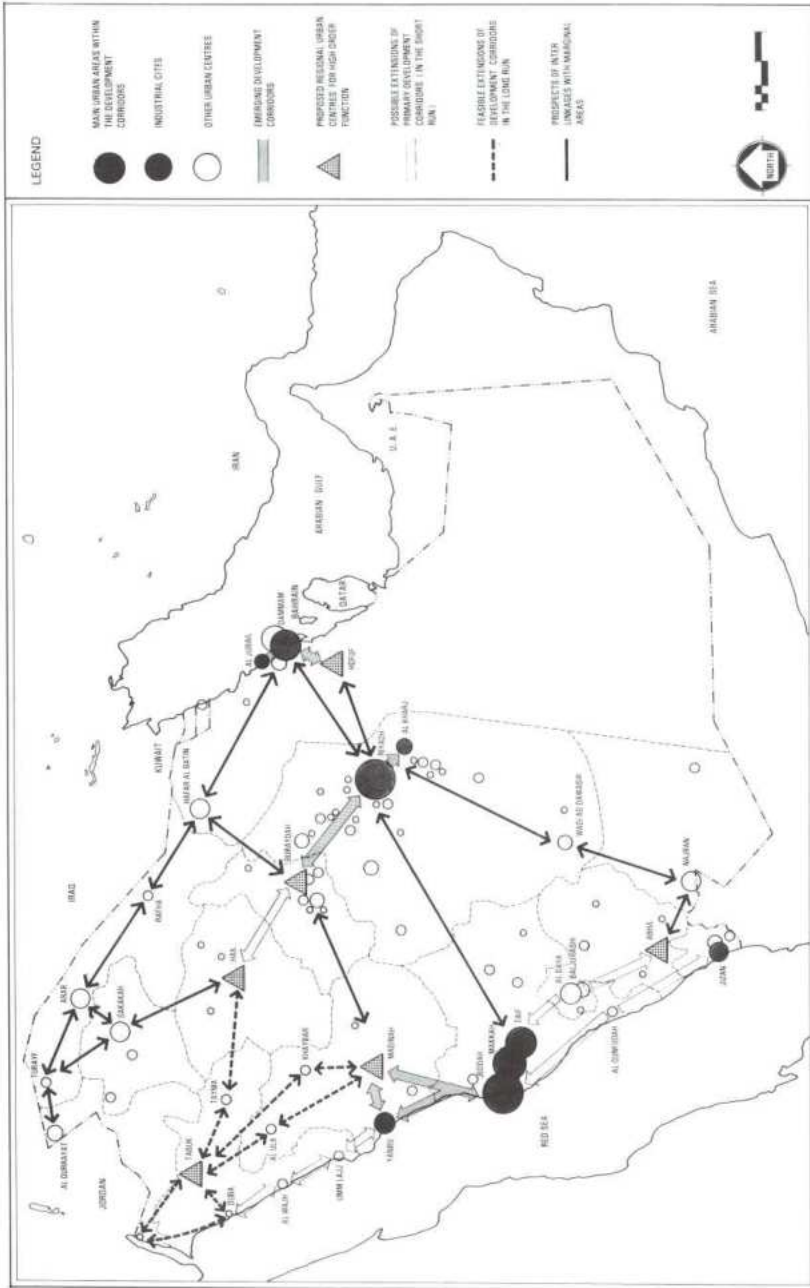
Prospects in the long run also exist for the promotion of secondary development corridors within: (i) the existing highland area between Taif and Abha; (ii) the coastal plain area from Jeddah to Jizan; (iii) along the northern border from Hafar Al-Batin to Qurayyat, (iv) from Tabuk to Madinah and from Jeddah to Haql along the Red Sea (Figure 57).

The appeal of promoting secondary cities within development corridors is its feasibility, since it acknowledges the important role of already growing urban centres in developing lagging areas, and the fact that it offers a compromise in the trade-off between efficiency and equity. It also acknowledges the dynamic relationship between agricultural production and urban growth in the development process. In the Kingdom, while agriculture is dispersed, secondary and tertiary activities cluster in urban centres. As a result, urban-rural terms of trade are disadvantageous to rural producers. Without a spatial development strategy that takes into account the urban-rural dynamics, the dominance-dependency between major urban centres and their peripheral areas will continue.

#### ***Fostering Long Term Prospects for Spatial Integration***

To foster the long term prospects for spatial integration between development corridors, the National Spatial Strategy, which is long term by nature, must aim at promoting other settlements (urban and rural) deep within the periphery to accelerate this integration process. To minimize the risk of a small population base, these settlements must be carefully selected on the basis of their growth potential and proximity to transportation networks and other proposed improvements in regional infrastructure. Priorities must be given to peripheral areas located to the west, east and south of the development corridor emerging between Riyadh and Hail and in areas in the north, especially those located in the triangle between Tabuk, Madinah, and Hail.

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*Figure 57: Proposed Development Corridors in the NSS*

### ***Protection of Environment***

The National Spatial Strategy must incorporate regulations and measures to protect environment, mainly from the adverse effects of urbanization and industrialization. This is a serious issue that must be addressed in the future. The large cities of the Kingdom are threatened by the adverse effects of congestion and pollution from vehicle and industries. A vigorous policy against pollution and congestion must be pursued. The private sector should internalize their negative externalities by paying for the pollution that they discharge.

### ***Comprehensive Rural Development***

Since the welfare of rural and urban population are inextricably interlinked through the process of rural-urban migration, an effective National Spatial Strategy must incorporate policies for rural development as to achieve:

- i) Improvement in the functional linkages between rural clusters and the adjacent urban centres to promote a hierarchy of services.
- ii) Introduction of measures to improve the rural settlement structure to diversify the rural economies as to attract agro-based and foot-loose small scale industries.

## **Policy Measures**

Since the National Spatial Strategy has multiple objectives, it calls for multiplicity of policy measures. These measures include:

### ***Improving the Internal Efficiency of Secondary Cities***

The success of the strategy will depend greatly on improving the internal efficiency of the secondary cities. Thus, at the city level, a structural plan needs to be prepared to guide the proper development of the secondary cities. Broad options for further expansion need to be identified and a local strategy established. This strategy must be consistent with the sources of internal and external growth of the selected secondary city.

### ***Improving Knowledge About Private Sector Requirements***

The Kingdom has a fundamental commitment to a large and increasing role for a vibrant private sector which operates in a context created by the development

## *A National Spatial Strategy*

initiated by the government. Therefore, it is important for policy makers to pay greater attention to the locational requirements of business firms; they must know which firms could benefit from expansion and which facilities can be made available in secondary cities (medium and small) to such an extent that expansion away from major urban centres is not harmful. Policy makers must also learn from private investors which cities and regions away from large urban networks could be attractive to their future activities. This information is very essential since firms can not be forced out of large urban centres.

### *Shifting the Spatial Distribution of Investment in Infrastructure*

To improve the national system of cities due to its dominant role in transmitting economic impulses and diffusing knowledge, sectoral development policies of central government must give priorities to the distribution of investment in infrastructure to overcome the bottlenecks in secondary cities. This is essentially important in the Kingdom since local fiscal resources to finance the provision of infrastructure are limited. It must be also emphasized that investment in the provision of infrastructure and public services in small towns and intermediate cities will not in itself attract larger increments of population growth because population moves primarily in response to differential income - earning opportunities, then promoting smaller cities may also require shifting the distribution of sectoral investment to expand the economic base of secondary cities.

### *The Use of Location and Activity Levels of the Government*

In the Kingdom, activities of the government constitute a large portion of the national economic activities. The use of the power of the government to direct the location of its activities toward specific urban centres can be a very powerful instrument in influencing the distribution of population among urban centres.

The Ministry of Municipal and Rural Affairs is in charge of allocating public land for government projects such as industrial parks, schools and other public services, it can definitely use this leverage to promote a spatially balanced distribution of population and related activities. Recently, MOMRA has been successful in convincing the Ministry of Industry that establishment of a large scale third industrial park in the city of Riyadh will further aggravate intra-regional disparities. As a result, the location of a new industrial park has been chosen on a 300 Km<sup>2</sup> site, north of Riyadh and adjacent to the Riyadh-Qassim highway. The distance from the new industrial park to the city of Riyadh is only 100 Km., which makes it possible to reach the city of Riyadh in less than one hour. Similar dialogue is ex-



pected to follow with the Saudi industrial investment funds to facilitate new industrial loans for the start up.

#### *Coordination Among Sectoral Support Programs*

Since the National Spatial Strategy is inter-sectoral in scope, then close coordination among sectoral agencies at the planning and implementation of development projects to be directed toward specific urban centres becomes very essential to the success of the strategy. Coordination at the early stages of planning could ensure that development projects directed toward chosen cities are prepared in packages and not shaped in isolation. These projects are expected to be a balanced mix of those aiming at improving the chosen urban centres' physical environment and those enhancing the urban centres' economic development prospects.

#### *Improving Local Capacities to Implement Urban Development Policies*

This National Spatial Strategy aims at achieving less centralized urban development, which will require more efficient public service provision. The challenge is to strengthen the technical and financial capabilities of municipal institutions to implement the urban development policies. This is mainly important since urban policies are largely, though not exclusively, managed at the city level. In this respect, major efforts need to be directed toward improving the organizational and management structure of municipal institutions. In addition, staffing municipalities with the required professional staff with adequate skills and motivation is extremely essential. Senior professional staff must be freed from the minutiae of day-to-day operations and devote adequate time to overall strategy and policy directions.

### **Conclusions**

The past urbanization trends in the Kingdom resulted in an over concentration of population in the three major urban areas of Riyadh, Jeddah and Dammam. There is little merit in allowing this trend to continue in the future. The proposed National Spatial Strategy is a hybrid strategy, in a sense that it combines strategies to influence the growth rate and the pattern of urban development of those cities in the top tier of the national urban hierarchy as well as strategies to promote secondary cities (medium and small) and to strengthen the urban-rural linkages. It is thus obvious that the proposed spatial development strategy recognizes the importance of seeking efficiency oriented urban levels of decentralization away from the major urban centres. It is also a viable strategy, in a sense that it builds on the existing strength of the network of cities and the associated transport system. It emphasizes

## *A National Spatial Strategy*

the role that medium and small urban centres can play in promoting a better integration between parts of the national space within the spatial context of development corridors. Since the National Spatial Strategy is very much an indicative document outlining a desired pattern of population distribution and urban development, it thus, leaves to regional plans the responsibility of the proper identification of secondary cities to be targeted within the identified development corridors as well as their roles, functions and required development packages. Making this strategy successful would require strong commitments of sectoral government as well as coordination in the implementation of a wide range of spatial and non-spatial policies such as: redistribution of future infrastructure; the use of location of new government functions as a lever to influence the distribution of population on urban centres. Implementing this strategy would require phasing over time of priorities and targeted urban centres. Since strategies are long term by nature, it would be unrealistic to expect major results within the time frame of one or two Five year Development Plans. Because spatial changes at the macro level are very slow policy makers should not expect too much too quickly, otherwise they may end up abandoning policies before they have had time to take effect.

### **Note:**

- [1] Also, the Brazilian initial experience with its polarization reversal strategy through the promotion of medium-sized cities program (MSCP) had also emphasized rural development program to complement its Urban Development Policies, see, Luis Suarez V, (1983), "Polarization Reversal and the Conflict Between Spatial Needs and Sectoral Policies in Brazilian Urban Development, Regional Development Dialogue, Vol. 4, No. 27, UNCRD, Nagoya, Japan: 1-14.

# 14

## Reflections On The National Spatial Development Future: *Continuity In Change*

Saleh Al Hathloul and Narayanan Edadan

We have observed in the earlier chapters that urban planning and even the understanding of urban context is complex and it requires a comprehensive development approach. However, the application of the standard urban development paradigm emphasizes an "incremental approach, based on relatively short-run programmes explicitly linked to individuals, projects, budgets and the political decision process (World Bank, 1972)" and focuses on strengthening the institutions responsible for the provision of housing, infrastructure and land policy (World Bank, 1983). This development approach, with its limited scope on more visible projects, emphasizes mainly the supply dimensions of urban growth with little attention to the demand aspects and issues related to the efficient management of urban resources.

The United Nations Development Programme (UNDP, 1989) in a review of urban development policy for the 1990s, argued that the State should find more effective ways to provide infrastructure, social services and to enhance the economic opportunities of cities. While discussing the urban crisis Stren and White (1989) observe that the inability of the governments to provide critical urban services, to maintain the urban infrastructure and to facilitate the local participation in the development process are the major aspects of today's urban crisis.

The urban growth strategy followed in the Kingdom during the last five development plans has adequately emphasized the supply aspects of city growth. Even though, this bias is required during the early stage of economic transformation of the Saudi society, the continuation of the same strategy during the current urban consolidation stage has created structural limitations. After 20 years of indiscriminate urban growth, cities in the country, small and large, have grown leaps and bounds, with pockets of built but unserviced areas adjacent to serviced but not built areas. Majority of the cities experience the problem of servicing the growing low density suburbs as well as maintaining the existing under utilized physical capital. The problem is compounded with limited private sector participation in these areas of urban development and the absence of financial autonomy of the local bodies.



## *National Spatial Development Future*

As a result, urban growth in the Country remains incremental and uncoordinated. The solution to these urban challenges is not only based on the implementation of a comprehensive urban development strategy but also on the strategic concerns and policy mix of the national urban policy. Since the structure of city level development strategies emerge from the national urbanization policy, it is necessary to review the need for such a policy and identify a desirable policy mix.

### **Do We Need A National Spatial Development Policy?**

The argument whether developing countries should have a national spatial development policy is not conclusive. Some argue (Renaud, 1981, Richardson, 1981, 1984) that a national spatial development policy is especially important for developing countries because the efficiency of their economic structures and the stability of their political systems depend on the effects of population movement and spatial location of new economic activities. Many reasons; high growth of urban population, the positive association between the national economic growth rate and the locational characteristics of investment, the role of the government to provide social and economic infrastructure, the need to redress the spatial imbalances generated by the rapid economic growth strategies, etc., are provided for recommending a national urbanization policy for developing countries.

However, a counter argument that the national spatial development policy slows down the urbanization and thus the economic growth of developing countries has equally gained ground. This argument (Richardson, 1986) finds its justification from the narrow definition of urban policy provided in many developing countries in which urban policy is defined either as a measure to keep population in rural areas or to promote growth of small or intermediary cities than large cities, in spite of any evidence that rural areas and small towns have a higher labour absorptive capacity than larger cities. The problem of decelerating urbanization interpretation of national urban policy is that it is difficult to demonstrate that slowing down urbanization would either promote growth or increase overall welfare, or both.

Moreover, many advantages of urban primacy are highlighted. In spite of the high employment absorptive cost in larger cities as compared to the smaller towns and rural areas, a primate pattern of settlements achieves a higher level of social welfare (Mera and Shishido, 1983). It is more efficient in attracting high productivity sectors, it can manage the inevitable congestion diseconomies of scale because a polycentric urban structure is more efficient than a monocentric urban structure (Gorden, Richardson and Wong, 1985) and it reduces the potential strains of absorbing the rapid urbanization.



However, the fact remains that in spite of these evidences which support a case for a primate pattern of settlements, policymakers in many developing countries still resist such a policy. Their support for a multi-polar urban pattern is not only based on the political and equity considerations, but also based on the urbanization absorptive cost. Richardson (1987), has shown that the costs of urbanization amount to a substantial portion of the resource pool of any country (as much as 60 to 100 percent) and it takes 9 years of per capita GNP or 41 years of gross domestic investment per capita to pay for the cost of absorbing one person in cities, and the absorptive cost is much higher in primate cities than in other urban areas.

In the absence of a clear evidence that slowing down urbanization is feasible and redistribution of national investments from the major urban centers to small urban centers and rural areas will increase the labour absorptive capacity and increase net social welfare, it is desirable to evaluate the need for a spatial policy within the context of a country and formulate a more appropriate policy mix to achieve the social welfare goals of national development.

The urban development challenges of the Kingdom of Saudi Arabia are similar to other countries in some areas and unique in some others. In addition to the features discussed in the various chapters of the book, we may highlight a few similarities and dissimilarities. Firstly, like many countries, Saudi Arabia experiences exponential growth and significant level of urban sprawl in its cities, particularly in large cities. It also faces questions related to location of activities, distribution of population and services and urban density. Secondly, Saudi Arabia also experiences the development challenge of economic dualism. Spatial inequality in the levels of living and development opportunities is an important development concern of decisionmakers. Thirdly, many large cities have to make a choice between the re-development of decaying downtowns and low density suburban development. Fourthly, like many other countries, Saudi Arabia also needs to develop appropriate institutions to solve its urban problems.

However, there are significant dissimilarities in Saudi urban problems as compared to other countries. Firstly, the balance between "private rights" and "public interests" the country would like achieve is influenced by Islamic law and the Saudi cultural values. Secondly, the centralized system of resource mobilization and allocation limits the financial independence and autonomy of local bodies in balancing their resources and requirements. Thirdly, the political, administrative, and technical incapacibilities of the urban local bodies to manage the modern problems. Fourthly, the challenges of realizing the fast growing aspirations of the people, without disturbing the social fabric of the society, is very demanding on the existing institutional structure.

## ***National Spatial Development Future***

The need to formulate a national spatial development policy, therefore, should emerge from the characteristics of the country's urban challenges and opportunities. Since the concern of urban primacy and social perception of urban problems is country specific (for example, Cairo sharing 37% of the national population is too large for Egyptians as that in Beijing with 2.83% of the national population for Chinese), it is necessary to examine this issue within the present and future urban development perspectives of the country. The following sections of this chapter is devoted to discuss the future development perspectives emerging from the population needs of the country and the resource challenges, both human and financial. Since the social welfare concern is basically related to national population, the scope of this analysis is limited to the Saudi population, in spite of the fact that the non-Saudi population is a critical input in Saudi economic development process, not only to realize the development potentials but also to transform those potentials into tangible results. Since more than two-third of the Saudi population is living in urban areas and the urban areas are growing almost double the national growth rates, the following analysis which is done for the total Saudi population largely reflects the future urban development challenges as well.

### **Past Experience In Improving The Quality Of Life**

Saudi Arabia can be proud of its socio-economic progress achieved during the past two decades. While acknowledging the impressive progress made by the Kingdom in many areas of human development, the National Development Plans have pointed out some key development issues in the Kingdom. Many of the issues are continuous in character, spilling over different plans. Some of the issues are; balanced development, efficient utilization of human resources, productive participation by the private sector, technology gap, sustained utilization of natural resources (Ministry of Planning, 1990). Even though, earlier plans have addressed these issues at various levels of importance, it is observed in the Fifth Plan that many of these issues will be equally pertinent in the coming years unless and until we strongly focus on the human resource dimensions of our national future.

#### **Demographic Characteristics**

The economic boom has in fact increased the propensity for population growth. Although the total fertility rate has increased from 7.1 in 1960 to 7.7 in 1985, (United Nations, ESCWA, 1985) but later decreased to 7.07 in 1990 and is expected to decline to 4.35 in the year 2020, it remains one of the highest rates in the world (United Nations, 1988). The impact of the high total fertility rate is to alter the population dependency ratio, in a way that makes such a ratio also one of

the highest in the world. The increasing child population, 42% in 1950 to 45% in 1990, has increased the Saudi population dependency ratio from 0.83 in 1950 to 0.92 in 1990, as compared to the 0.49 in the high income countries in 1990.

### **Educational Performance**

An important characteristic of the quality of human resource is the level of education and the technical skill of people. In spite of a significant increase in educational facilities and the resulting school enrollment among Saudi children, the Saudi human resource lags in productive capabilities as compared to other developed nations.

Even though the growth of educational facilities has been significant, the enrollment performance, particularly among male Saudis, has been poor during the past 20 years. This pattern is true for male and female general education as well as for technical education in the Kingdom (Table 47).

*Table 47*  
*Growth of Educational Performance*

Year	Ele. School Enrollment (Annual Growth in %)		Year	Graduates as % to Enrollment in Tech. Education
	Male	Female		
1970-75	14.4%	21.6%	1970	17.0%
1975-80	7.8%	9.2%	1975	31.0%
1980-85	7.2%	16.1%	1980	21.0%
1985-89	5.1%	5.9%	1985	19.6%
			1989	24.5%

*Source: Ministry of Planning, 1991: p.92.*

### **Labor Force Participation**

One of the significant impacts of poor level of higher education is the poor labor force participation of Saudi population. Saudi Arabia has one of the poor labour force participation rate in the GCC countries (Table 48). Only 31.7% of the labour force in the Kingdom was actively employed in 1985 as compared to 78.4% in Bahrain. This low activity rate is true for male and female work force as well.



*Table 48  
Labour Force Participation, 1985*

Countries	Crude Activity Rate			Refined Activity Rate		
	Total	Male	Female	Total	Male	Female
Bahrain	28.7	45.8	11.5	48.0	78.4	19.5
Kuwait	18.7	32.1	5.8	36.7	64.6	11.1
Oman	20.7	36.9	5.7	39.4	74.6	10.3
Qatar	21.2	37.9	5.0	41.0	73.4	9.5
U A E	17.9	33.4	1.4	36.7	67.5	2.9
Saudi Arabia	16.0	29.8	1.6	31.7	58.8	3.2

Source: *United Nations, ESCWA, 1985*

Notes: [1] *Crude Activity Rate = Number of economically active persons (>15 years of age) as a percent total population.*

[2] *Refined Activity Rate = Number of economically active persons (>15 years) as a percent to population above 15 years of age.*

### **Saudi Health**

Meeting the basic health care needed by societies is not only a goal of development in itself, it is also a national investment in human capital at the same time. Saudi achievements in this aspect have been remarkable. As a result of the massive investment in the health sector, the health facilities have improved remarkably. The number of physicians have increased from 112 in 1950 to 12,930 in 1990, the number of hospital beds have increased from 3,800 in 1961 to 39,500 in 1990. The increasing growth trends experienced during the early period of development plans have reversed during the latter part of 1980s, indicating increasing resource limitations (Ministry of Planning, 1991: 114).

An evaluation of health care system indicates that the achievements in this sector fall short of expectations. Infant mortality rate and the life expectancy at birth, the two important indicators of social health, are still very high as compared to other GCC Countries. Health planners observe that the urban bias in the health care system, the shortage of Saudi health care personnel, the recent introduction of referral system and the poor medical accessibility of urban population during emergency are some of the reasons for the poor performance.



## Saudi Quality Of Life As Compared To Other Countries

While the Saudi achievements in terms of economic growth and quality of life have been credit worthy, a comparison of some of the indicators of development with other developed countries indicates that the Kingdom has significant challenges ahead in many areas of human resource development (Table 49).

*Table 49  
Comparison of Saudi Arabia with High Income Countries, 1989*

No. Social Indicators of Development	Saudi Arabia	High Income Countries
1. Child Population <15 age	45%	20.5%
2. Birth Rate (per 1000)	42.3	13.7
3. Total Fertility Rate	7.2	1.8
4. Infant Mortality Rate per 1000 births	71.0	9.6
5. Life Expectancy	63.4	76.0
6. Age Dependency Ratio	0.9	0.5
7. Percapita Income (\$) (at current prices)	6170	17080
8. Population/Physician	688	530
9. Population/Bed	679	100
10. Ele. School Enrollment	71.0%	102%(*)
11. Female Ele. Sch. Enrollment	65.0%	102%(*)
12. Sec. School Enrollment	44.0%	95%
13. Pupil Reaching Grade 6	79.0%	99%

*Source: (1) World Bank, 1990.*

*Note (\*): Some countries with universal education, gross enrollment may exceed 100% since some pupils are younger or older than the country's own standard primary school age.*

### Resource Mobilization Potential

Saudi national resource is comprised of oil revenue and the productive contribution of non-oil sector. Even though the share of non-oil sector to the GDP has increased from 41% in 1970 to 70% in 1990, Saudi economy is still oil based and the buoyancy and strength of the economy is basically dependent on the oil revenue related public expenditure. Past trends in some of the economic development

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indicators suggest that the decreasing oil revenue and the increasing population have set in decreasing trends in the per capita income and per capita public expenditure of the Kingdom (Figure 58). The Kingdom is yet to recover from the oil revenue setback experienced in the early 1980s.

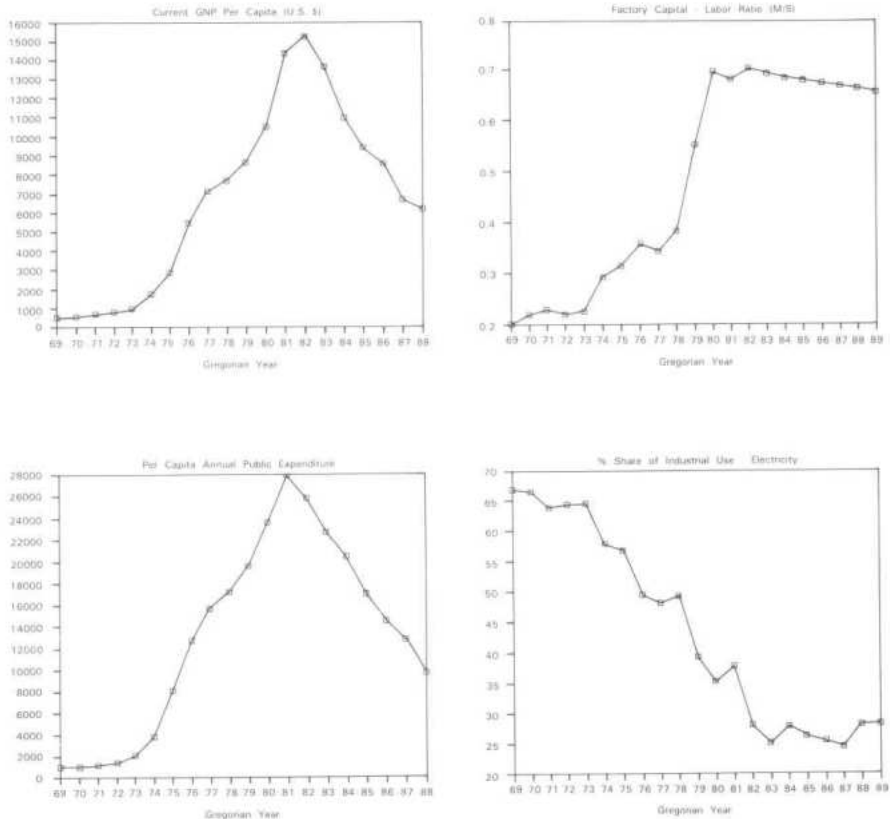


Figure 58: Past Trends of Economic Indicators, 1969-1988  
Source: Ministry of Planning, 1991

### Levels Of Living

Levels of living is visualized as the level of consumption of goods and services enjoyed by the households that are provided by the public and private sector agencies. One of the best indicators of levels of living is the per capita income. In order

to have an idea on the implication of the increase in the future population on the levels of living, one may ask a basic question:

*"By what rate the Gross Domestic Product (GDP) should grow during the coming 25 years in order to maintain at least the present levels of living?"*

Specific answer to this question is not easy. However, we may indicate the magnitude of the income growth required in the economy (Table: 50).

Even though the GDP (1984 = 100) has grown at the rate of 3.1% average per annum during 1969-1989, the average 'post oil price crash period' (1983-89) GDP growth was only 0.70% per annum (Ministry of Planning, 1991:225). In order to maintain at least the present level of consumption in the year 2020, the GDP should grow at the rate of 5.35% per annum. This income growth requirement is too challenging as compared to the past economic growth experiences of the Kingdom.

*Table 50  
Income Growth Required*

SI.No.	Economic Characteristics	
1.0	GDP (at constant prices) in 1989 (SR)	385.02 Billion
1.1	Oil Sector Share	40.2%
1.2	Non-Oil Sector Share	59.2%
2.0	GDP required in 2020 to maintain the present levels of living (SR). [1]	1024.4 Billion
3.0	GDP annual growth required	5.35%
4.0	Required non-oil sector annual growth rate if the oil sector continues to grow only at 1983-89 growth rate.	8.7%

*Note: [1] Assumptions: a) The future population is 38.9 Million.  
b) The 1989 population was 14.62 Million.*

*Source: Ministry of Planning, 1991:11.*

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If we assume that the oil sector could only grow at the 1983-89 growth rate of 0.88% per annum, then the non-oil sector should grow at the annual rate of 8.7% during the coming 25 years, as compared to its growth of 0.39% during 1983-89 period. If, on the other hand, the government is interested to maintain the GDP share of oil sector at 40%, then the oil and non-oil sectors should grow at the rate of 5.3% and 5.7% per annum respectively to maintain the present levels of living. These requirements indicate the scale of economic growth challenges the nation is likely to experience in the future, warranting a re-structuring of the economic development strategy itself.

A good example is the public expenditure in education and health sectors. Past resource allocation trends in these sectors indicate that public expenditure allocation in projects has been on the decrease since 1986, was at its peak during the 1977-78 period, and the allocation in the salaries and general expenditure has been on the increase (Table 51). The earlier estimate of the projected social service requirements in these sectors, however, indicates the need to step up the project allocation in these sectoral budgets.

*Table 51*  
*Budget Allocation in Education and Health Sectors (Million SR)*

Year	Min. of Education (Boys)		Min. of Health	
	Salaries & Gen.Exp.	Projects	Salaries & Gen.Exp.	Projects
1970	325 (83.5%)	33.6 (8.6%)	153.8 (90.7%)	13.6 (8.0%)
1975	888.6 (66.9%)	360.3 (27.14%)	486.4 (83.5%)	84.2 (14.5%)
1978	3566.2 (38.5%)	5270.3 (56.8%)	1184.7 (39.8%)	1736.8 (58.4%)
1983	7303.7 (74.1%)	2478 (25.2%)	4038 (59.1%)	2793 (40.9%)
1988	8692.3 (83.4%)	1667.1 (16.0%)	5616 (62.7%)	2220.1 (24.8%)
1992	10089 (94.8%)	516 (4.8%)	6251 (75.1%)	659 (7.9%)

Source: Sectoral Ministries, 1992.

Note: Figures in brackets are the percentages to the total annual budget allocation of the respective Ministry.



Another important element in the national resource is the productive contribution from the factors of production. While the availability of land and investable capital is not a constraint at present, their planned utilization is an important bottleneck. Sporadic and unorganized development of urban land have created significant long term problems, which require comprehensive urban land management strategy and planning actions.

Similarly, the gross domestic investment has been on the decrease, even though the latter part of the 1980s has seen improving trends (Table 52).

*Table 52*  
*Annual Growth of GDP and Domestic Investment*

Year	GDP	Domestic Pri.Consumption	Domestic Pub.Consp.	Domestic Investment
1970-75	51.6%	25.2%	36.0%	36.8%
1975-80	22.5%	41.5%	37.3%	34.0%
1980-85	-4.1%	9.1%	8.1%	-3.8%
1985-88	-4.7%	-7.2%	-7.8%	3.5%

*Source: World Bank, 1991.*

One of the main reasons for this downward trend in domestic consumption and investment is their dependency on the public expenditure which has continuously been on the downward trend since the 1980s.

### **Saudi Employment**

The next area in the productivity strategy relates to labour. Even though, the Saudi labour productivity has improved during the last two decades, it has a long way to go to reach either competitiveness or labour self sufficiency. Excessive dropout rates among the Saudi youths have contained Saudi employment to lower occupational cadres, for example, 50% of the new Saudis entering the labour market have only primary level of education (Ministry of Planning, 1990). One of the main areas where the poor level of Saudi skill development reflects is the stagnant share of Saudis employed in the private establishment sector (Table 53).

## *National Spatial Development Future*

*Table 53  
Employment Share of Saudis in the Private Establishment Sector*

Year	Total Workers	Saudi Labour	Percentage
1987	1619,000	284,000	17.54
1988	1541,000	289,000	18.75
1989	1864,000	328,000	17.60
1990	1905,000	339,000	17.80

*Source: Central Department of Statistics, 1992.*

Moreover, the number of Saudi males graduating from the higher education has decreased during the latter part of 1980s (3.1%) as compared to its remarkable growth during the 1970-85 period (23%) (Ministry of Planning, 1991). It is necessary to note that the female enrollment and graduation rates have been far better than that of the males. It is important, therefore, to develop an appropriate strategy for improving the productive participation of Saudi female graduates in the future.

The labour productivity and the productivity of the economy are influenced by the capital employed in the productive sectors. Available information in this respect again indicates the non-manufacturing base of the Saudi economy. Majority of the economic diversification has taken place in the government and service sectors. The industrial capital/labour ratio, which indicates the capital intensity and productivity of labour has not improved since 1980 (Ministry of Planning, 1991: 59).

Again, the industrial consumption of electricity, which is a good proxy variable of industrial technological development, is also on the downward trend. These are signs of poor technological innovation in the Kingdom. Concerted efforts are required to reshape the productive base of the Saudi human resource through the modernization of educational programme, restructuring of investment and changes in the social perceptions of work ethics.

### **Population Needs And Future Spatial Development Challenges**

The Saudi population of the Kingdom estimated at 5.9 million in 1974 could reach 39 million in the year 2020, rating the Kingdom as one of the fastest growing nations in the world. According to the recent population census, the Kingdom had 12.3 million Saudis (72.7% of the total population) in 1992 and the Saudi popula-

tion has grown at the rate of 4.2% (compound) during the 1974-1992 period. Experiences from around the world suggest that a population increase of this magnitude could pose serious developmental challenges and widen the "social aspirations-achievements gap", strong enough to threaten the socio-economic fabric of the society unless and until the vastly growing human resources are converted into productive human capital.

Much has been discussed and reported about the Saudi development model. While enjoying the benefits of today's prosperity, it is very much necessary to look a head of the present time and ask a few fundamental questions on the future of the Saudi society. The main issues facing any socially conscious decisionmaker and planner are:

- \* Can the Saudis improve the standard of living and live the next 25 years in a better position than in the past two decades?
- \* Can the Saudis enhance the potentials of their human resources and balance the economic and social value systems adequately to ensure the "continuity in change"?
- \* In short, Can the Saudis meet the challenges and opportunities the nation is likely to confront over the next 25 years?

An important aspect of development decisionmaking, therefore, is to understand the strategic role of population and its impacts on the societal needs so as to prepare the institutional structures to respond to the social aspirations and to further them.

#### **Projected Saudi Population: 2020**

Population projection for a longer period of time is likely to be inaccurate, particularly in a fast changing society such as Saudi Arabia. However, based on the past growth and demographic characteristics a few plausible variants could be developed to show the magnitude of change. Figure 59 indicates these variants. The population projection, according to the United Nation's Study (1988), is based on the alternative assumptions (variants) of changes in the total fertility rate (TFR). The projection estimates vary from 49.5 million for the high variant assumption (TFR declines from 7.2 in 1985 to 5.9 in 2020), 44.4 million for the medium variant (TFR declines to 4.3 in 2020) and to 39.6 million for the lower variant (TFR declines to 2.8 in 2020). Besides, based on the 1974-1992 Saudi population growth rate, the 2020 Saudi population could be about 40 million. The remark-

## National Spatial Development Future

able reduction in the infant mortality from 71 in 1989 to 23 in 1992 (United Nations, ESCWA, 1993) is likely to push the population upward. In the light of a high drop in the infant mortality rate and a weaker reduction in the TFR, a more plausible estimate for the projected population in the year 2020 could be about 40 to 45 million.

In spite of the wide ranges in these estimates, it could be reasonably assumed that the total population of the Kingdom in the year 2020 could be about three times the 1992 population. These trends indicate that the Kingdom's population will be one of the fastest growing in the world in the coming 25 years. The challenging task of the development planners is to enhance the productive capabilities of the growing human capital through a proper human resource development strategy and to integrate the spatial and economic planning policies to achieve these objectives.

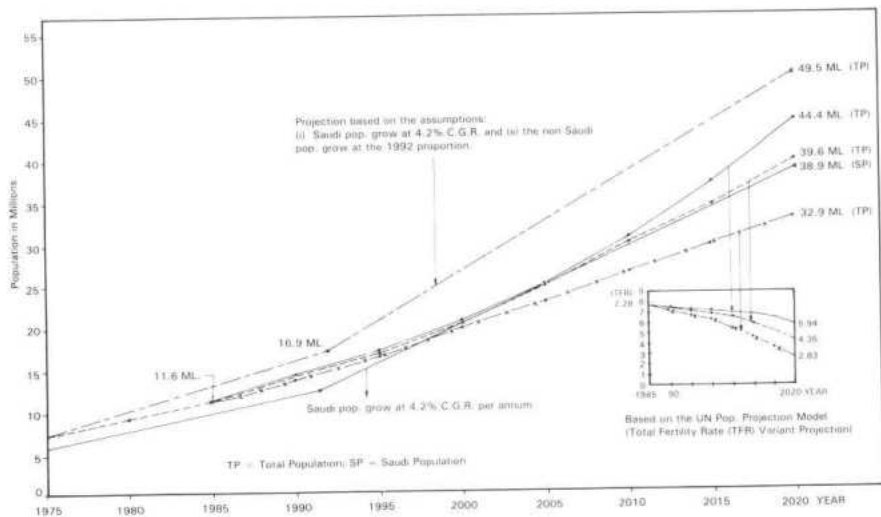


Figure 59: Variants of Population Projection, 1992-2020

### Demographic Structure Of Future Saudi Population

Based on the population projection assumptions, as indicated in the Table 54, some of the plausible implications could be drawn:

- \* The Kingdom could have about 15.4 million children (0-14); 39.6% of the total population in the year 2020, of which about 9.9 million children (5-14 years) will be in the school going age, seeking various levels of primary education.



- \* This sizable child population, along with the rest of the Saudi population, will demand higher level of child care and other health care facilities.
- \* About 7.5 million youth (15-24) will be seeking higher education at various levels.
- \* By the year 2020, approximately 20 million Saudis could be in the job market.
- \* At the present level of educational performance the number of female students graduating will be more than the males (Table 47), demanding a restructuring of manpower utilization strategy.
- \* By 2020, about 88% of the national population (about 34.2 million) could be living in urban areas. This will significantly increase the demand for urban infrastructure and services and generate heavy development pressures on cities,

*Table 54  
Demographic Structure of Saudi Population in the  
Year 2020 (in thousands)*

No.	Components	Male	%	Female	%	Total	%
1.	Infants (0-4 years)	2816	14.0	2706	14.4	5522	14.2
2.	School going Children (5-14)	5048	25.1	4866	25.9	9914	25.4
3.	Labour Force (15-64)	11383	56.6	10616	56.5	21999	56.5
4.	Elderly (65+)	864	4.3	601	3.2	1465	3.9
5.	Total	20111	100.0	18789	100.0	38900	100.0

*Notes: [1] Projection of the total population is based on the assumptions given in the Fig. 59. By the year 2020 the net migration rate is assumed as zero (United Nations, 1988).*

*[2] The age-sex proportions are based on the World Bank estimates. (Bulatao, Bos, Stephens, and Vu, 1991).*

*[3] This estimate is based on the low-variant projection assumptions. Hence, this is the minima in the estimations.*

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particularly primate cities such as Riyadh, Jeddah and Dammam if the present development strategies continue.

- \* About 6.9 million males and 6.7 million females could be in the marriage age (15-34). This will exert high social and economic pressures on the society. For example, the prevailing poor marriage rate among the educated females, is a pointer.

### Basic Population Needs: Social Services

The immediate impacts of the increased Saudi population could be better expressed through the future basic social service needs of the society. A tentative estimate of the basic social service needs of the Saudi population in the year 2020 suggests a re-structuring of the public and private resource allocation policy followed by the government at present (Table 55). If we estimate the future requirements based on the planning standards, we may have to construct 22,500 elementary schools and about 6,000 secondary schools and technical institutes to educate the additional population. However, based on the 1989 number of students per school ratio, we may have to construct as many as 71,450 schools (elementary + higher education) to educate the additional population in the age group of (5-24) during the coming 25 years. This calls for a school construction rate of 5.3% per year to accommodate the requirement based on planning standards and 13.4% construction rate per year based on the present level of educational accessibility. However, during the last 5 years (1984-1989) the school construction rate has declined to 2.8% per year as compared to 5.2% during the earlier 10 years.

Table 55  
Basic Social Service Needs of Additional Saudi Population  
in the Year 2020

S/No	Basic Needs	Number of Facilities as on 1989 /1990	Add'l. Future Requirement <sup>[1]</sup>	
			Units Required	Gross Dev. Land
1.0	Public Health and Child Care Centers	3033	5400	5400 H
2.0	Hospitals	254	360	5400 H
3.0	Hospital Beds	39500	216000	**

*Table 55, continued*

SINo	Basic Needs	Number of Facilities as on 1989 /1990	Addt'l. Future Requirement <sup>[1]</sup>	
			Units Required	Gross Dev. Land
4.0	Elementary Schools )		22500	19125 H
5.0	Secondary Schools )	17268 [2]	5400	6400 H
6.0	Technical Schools	41	675	575 H
7.0	Local Recreational Parks	n.a.	**	3888 H

*Note: [1] The required additional units are calculated based on planning standards (DMTP, 1990).*

*[2] This estimate includes faculties in higher education.*

### **Housing Needs**

The Saudi experience in the field of housing construction has been remarkable. The Real Estate Development Fund (REDF) instituted in 1975 for the purpose of granting interest free loan to Saudis for the construction of private and investment housing units has funded 483,487 housing units until 1991/1992, disbursing about 100 Billion Saudi Riyals (US \$ 26.7 Billion). The total number of housing units constructed with the help of the REDF loan, however, comprise of only about 18% in 1992 (based on the 1992 Census estimate of 2.8 million units of housing stock).

The additional resource required to accommodate the increased future Saudi population seems staggering, particularly in the context of decreasing disbursement trend of the REDF loan during the 1975-1992 period (REDF financed housing units constructed during 1986-1992 was 93,773 as compared to 201,891 units during 1975-1980) (Real Estate Development Fund, 1992).

Table 56, indicates the level of resource requirement for accommodating an additional 4.5 million households by the year 2020. A housing development strategy based on the Real Estate Development Fund alone will demand 982 billion Saudi Riyals (US \$ 261.9 Billion) to finance the additional housing need. Again, based on today's pattern of urban structure, the Kingdom has to develop urban land to the extent of the area of 7 cities similar to the size of Riyadh to accommodate the additional people. This calls for active private sector investment participation in the housing sector and a drastic re-structuring of the public housing development

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strategy to meet the future housing sector challenges.

*Table 56*  
*Housing Needs of the Additional Saudi Population in the Year 2020*

Sl No	Elements	Future Requirements
1.0	Housing Units	4.5 Million
2.0	REDF Fund based on the average rate of loan/housing unit (SR)	982 Billion Riyals
3.0	Residential Developed Land based on the planned density of 50ppH	5400 Sq.Km
4.0	Residential Developed Land based on the present residential density of Riyadh	12858 Sq.Km

## **Conclusions**

The above analysis on the future Saudi needs and the Saudi experiences in the past in achieving the quality of life give rise to few basic strategic policy questions.

The basic questions are:

"Will the future gross national product, public expenditure, domestic private investment and Saudi labour productivity grow sufficiently to meet the resource requirements generated by the increasing population growth?" Have we an incipient urban crisis in hands? Or are these challenges a passing phase of the development adjustment process?

Future development strategy should be influenced by the possible answer to these questions. Even though the prevailing institutional policies and programmes are supportive, but not adequate, a comprehensive awareness of the future societal needs and our willingness to mobilize the required resources shall enable us to enhance the productive capabilities of the Saudi population and the quality of life.

The need of the time is to appreciate the seriousness of the developmental pressures emerging from the increasing population growth and the constraints of the present development planning system to meet the emerging social aspirations.



It is necessary to accept that the future development should be based on a sustainable development strategy by balancing economic efficiency, social justice and environmental livability. A development approach which integrates the spatial and sectoral dimensions of national development within a co-ordinated institutional framework could be the basis of such a national spatial development strategy. Under a comprehensive spatial development policy, which is primarily built on a sustainable development strategy, the interaction of demand and supply processes of national resources could be the basis to determine how the demand of urban labor could be managed?, how the supply and demand for urban land could be balanced?, how to provide physical and social infrastructure efficiently?, how to make the cities competitive?, and how to increase the quality of life and levels of living of its citizens?

One of the main goals of national spatial development policy in the Kingdom could be to increase the efficiency in urban areas through the interventions that increase the utilization of physical stock of capital, lower the cost of production and to increase the private sector participation in the provision and maintenance of infrastructure. If we accept the notion that more private sector participation to service the tripling urban population by the year 2020, is critical, then the basic strategic questions are: should the central government continue to finance the urban services?, or should they assign these investment decisions to local bodies?, if so, what should be the level of financial independence of these local bodies?, or should these investments have to be financed through private sector participation?, if so, what should be the procedures for private sector operation in these areas of investments?. These are the major issues in which more policy and research inputs are required in the future.



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