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GRADUATE COLLEGE

THE SPATIAL IMPACT OF GOVERNMENT FUNDING IN SAUDI ARABIA: A STUDY IN RAPID ECONOMIC GROWTH WITH SPECIAL REFERENCE TO THE MYRDAL DEVELOPMENT MODEL

A DISSERTATION

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by

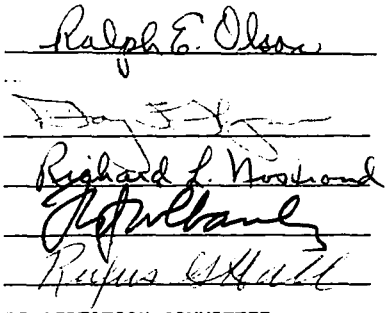
MANSOOR NASSER ALOHALY

Norman, Oklahoma

1977

The Spatial Impact of Government Funding In Saudi Arabia:
A Study in Rapid Economic Growth with Special Reference
to the Myrdal Development Model

APPROVED BY



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Chapter I

INTRODUCTION

General Introduction to the Region and the Problem

The modernization of "backward areas" is a favorite topic of discussion among social scientists. These so-called backward areas are present in various parts of the world and include scores of countries. In some of these countries, economic and social conditions are relatively stagnant and unchanging. In others, they are changing rapidly. A specific example of rapid change is the modernization process now going on in some of the Middle East countries where the development of oil resources has created, within a short time span, great wealth. The purpose of this study is to describe and analyze the development process within one of those Middle East countries, Saudi Arabia, with special emphasis on the spatial impact of government funding.

At least a generation ago, writers like C. E. Ayres[1]

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[1]C. E. Ayres, The Theory of Economic Progress: A Study of the Fundamentals of Economic Development and Cultural Change, 2nd ed. (New York: Schocken Books, 1962).

and W. W. Rostow[2] were examining, in general terms, the process of economic development, while later scholars, often using sophisticated mathematical procedures, have devised development models to use in examining or testing specific cases. This study reviews briefly some of those models and explores the extent to which one of them, the Gunnar Myrdal development model, is applicable to the Saudi Arabian case. The development of Saudi Arabia is studied in terms of twelve specially chosen economic and social variables. Development in terms of these variables over a ten-year period (1964-1973) will be examined as a basis for testing the applicability of the Myrdal model to Saudi economic development, especially with regard to economic convergence and divergence between regions. The contribution of the study, it is hoped, is a better understanding of the rapid development process characteristics of contemporary Saudi Arabia.

Such terms as "backward areas," "less developed countries," and "Third World countries" are typically associated with the economically underdeveloped nations of Africa, southern Asia, and South America. These areas are

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[2]W. W. Rostow, The Stages of Economic Growth: A Non-communist Manifesto (Cambridge: The University Press, 1961).

characterized by low per capita income, a high percentage of the population engaged in agriculture, and little industrial capacity of the kind found in, say, most of the nations of Europe and North America. The underdeveloped nations are further characterized, in most instances, by a low rate of economic growth. Insufficient capital input into their economies serves to maintain the imbalance between them and the economically more advanced countries.

The discovery and exploitation of oil resources in a few Third World nations has drastically changed their pattern of activities and prospects for modernization in the usual sense of that term. In the case considered here, huge oil revenues, amounting to many billions of dollars per year, have become available to the government of Saudi Arabia. Through the aid of these funds, the present government hopes to modernize that country in ways that are economically and socially desirable, while retaining some aspects of the traditional Muslim culture.

Saudi Arabia's recent debut as a rapidly developing country owes its origin to a steady growth in oil income. From a small beginning in 1938, two years after an exploration-production concession was granted to a consortium of American oil companies, the annual output of crude oil

has reached nearly 8,570.0 million (42 gallon) barrels.[4] Proved reserves, according to the latest published estimates, amount to 150 billion barrels, but the supply will not last long at the current rate of extraction. The Saudi Arabian government appears to be fully alive to its overwhelming dependence on a single source of revenue and is taking vigorous action to diversify the national economy by expanding other nonpetroleum sectors as rapidly as possible.

In Saudi Arabia, the near total dependence on oil is not of immediate concern because of the phenomenal abundance of the resource and the universal demand for it. The rapid increase in revenue from oil production has given Saudi Arabia ample government resources for internal development and whatever is needed in foreign exchange with which to import foreign materials and technical assistance. It is obvious that for nearly four decades, oil revenues have been the primary support for economic expansion in the country, rather than agriculture, mining, or manufacturing. The economy will continue to grow for some time while depending upon the revenue and foreign exchange earnings

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[4] The Oil and Gas Journal, Vol. 74, December 27, 1976, p. 104.

of the now nationalized petroleum industry. It seems important that Saudi Arabia gradually diversify its primary production, other production activities, and exports to assure a permanent character to its present prosperity (Table 1).

Through its foreign exchange earnings from oil, Saudi Arabia is able to provide itself with the administrative skills, labor resources, technology, machinery, and other materials required for rapid development, as well as the necessary consumer goods not produced in the country. Government revenues from the petroleum industry include oil royalties and taxes from Aramco, the Getty Oil Company, and the Japanese-owned Arabian Oil Company, plus Tapline transit fees paid for transporting oil by pipeline across the Arabian peninsula to the Mediterranean Coast. Some additional revenue is derived from customs duties; taxes for transportation, communication, and other services; document fees; the sale of government property; and leases of government land, buildings, and other facilities.[5] There is no personal income tax in the western sense. The government's cash flow and foreign exchange position in recent years has

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[5]Statistical Analysis of Saudi Arabia, 1973, p. 112.

Table 1

Saudi Arabia-Government Budget

(Million U.S. dollars)

Gregorian	Total
1939	3.2
1946	10.4
1951	110.0
1956	290.2
1961	377.6
1965	662.6
1971	6,321.9
1975	25,676.2

SOURCE: Saudi Arabia Monetary Agency Annual Report 1395, A. H., Jeddah, Saudi Arabia, 1975.

In general, dates in accordance with the familiar Gregorian calendar are employed in this dissertation. It should be noted, however, that Saudi Arabia and other Muslim countries use a calendar based on a critical year in the life of the prophet Mohammed and assign dates in accordance with the number of years preceding or following the hegira (622 A.D.).

approximately matched the steady growth in revenue.

Modernization in Saudi Arabia has been accompanied by many evident social changes: general Europeanization, a wider variety of consumer goods and services, increased personal mobility, some abandonment of traditional values, the modification of personal family relationships, and regional and occupational specialization. Some writers, perhaps a little prematurely, even refer to the demise of the traditional Muslim community. While these and other aspects of Saudi Arabian life will be discussed briefly in the course of the present study, the primary emphasis is on modernization in terms of growth as measured by changes in twelve specially chosen economic and social variables defined later in this chapter.

The design and testing of growth models have become a widely used technique among social scientists in examining the development process in Third World countries. The majority of economic growth models devised by economists have been essentially non-spatial. Space in these models is neutral, and distance has a constant value. The models assume that, given relatively free mobility within a country, there will gradually be an equalization of income among regions, and that regional inequalities are only temporary due to a slight lag in adjustment. However,

according to Keeble, a British geographer, such models "are of little use in illuminating the development of spatial variation in the real world, since such variation is not only remarkably persistent, but apparently increasing in many countries."[6]

The inadequacy of many of the purely theoretical models has resulted in the development of other conceptual models stressing spatial variation in national or regional economic development. Some of these models will be discussed in Chapter II. Of special importance to the present study is the one developed by Gunnar Myrdal, a Swedish social scientist, during the mid-1950's.[7] Myrdal has had a special interest in trying to understand the nature of the underdeveloped countries of the world and their problems. His particular focus is exhibited in such works as Asian Drama: An Inquiry into the Poverty of Nations;[8] Beyond the Welfare

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[6]D. E. Keeble, "Models of Economic Development," in Socio-Economic Models in Geography, ed. by Richard J. Chorley and Peter Haggett (London: University of London Press, 1970), p. 258.

[7]G. Myrdal, Rich Lands and Poor (New York: Harper and Brothers, 1957).

[8]G. Myrdal, Asian Drama: An Inquiry into the Poverty of Nations, 1st ed. (New York: Pantheon Books, 1972).

State: Economic Planning, International Implications;[9] and Economic Theory and Underdeveloped Regions.[10]

Developed mainly with reference to countries exhibiting a low level of economic growth, Myrdal's development model assumes that in a free economy inequalities between regions tend to increase rather than decrease, that "new increments of activity and growth will tend to be concentrated in the already expanding regions because of their derived advantages rather than in the remaining areas of the country."[11] Myrdal believes that restricting theoretical analysis to the interactions of purely economic factors is unrealistic. He argues that it is precisely in the realm of that large part of social reality which is left outside the economic analysis, and which is often difficult or impossible to measure with precision, that the equilibrium assumption falls to the ground. The non-economic factors, such as health, welfare, and social structure, cannot be taken as given and static; they influence the

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[9]G. Myrdal, Beyond the Welfare State: Economic Planning, International Implications (New Haven: Yale University Press, 1956).

[10]G. Myrdal, Economic Theory and Underdeveloped Regions (London: G. Duckworth, 1957).

[11]Keeble, p. 258.

development pattern and they normally do so in a disequilibrating way.[12]

At a time when many Third World countries are beginning to evolve from an "underdeveloped" status to an "emerging" status, an understanding of the actual modernization process as exemplified in these countries becomes increasingly significant. Of special concern is the question as to whether or not the growth process in a regional system leads to the convergence of standards of living throughout a given developing country. In this dissertation, the Myrdal divergence-convergence concept, further explained in Chapter II, is examined with particular reference to Saudi Arabia.

A special aspect of the Saudi Arabian case is the impact of government funding on the economic, social, and political development of the country. Because the government of this oil-based economy, with an annual revenue of many billions of dollars from foreign petroleum sales, is the chief source or stimulus for economic growth, its policies and planning concepts are applicable to only a few of the underdeveloped countries. The present study seeks to analyze changes through time in specific aspects of

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[12]Myrdal, Rich Lands and Poor, p. 10.

regional inequality within Saudi Arabia. A significant question, which is both theoretical and practical, is whether or not the regional growth is equilibrating, that is, whether the growth process in the Saudi Arabian regional system is leading to the convergence of economic levels throughout the various regions of the country.

My study of Saudi Arabia should be thought of as applicable primarily to this one country, although hopefully it can also serve as a guide to understanding some other rapidly developing Third World countries, such as Iran, Kuwait, Libya, Nigeria, and Venezuela.

A fairly serious limitation of the study is the inadequacy of precise and reliable data needed for a detailed empirical analysis of the divergence-convergence idea. Other limitations are the small number of regions used in gathering and reporting data, and the restricted number of social and economic variables for which data is collected. Furthermore, the recency of systematic data-collecting activity on the part of the Saudi government means that not much detailed data is available for the period prior to 1960. However, sufficient data is available for the period beginning about 1960 to give meaningful answers to the problems posed by this study.

The writer is aware that the question of the existence of convergence or divergence in a regional system is both complex and controversial, and that prominent scholars of economic development present points of view that support both convergence and divergence. The conclusions of this study must be read and appreciated in relation to the clearly stated social values and assumptions of the Saudi government leadership.

While striking inequalities are still present, and are characteristic of most traditional monarchical systems, the established policy of the present Saudi Arabian government is to seek greater social and economic equality among the population. While acknowledging that any rise in the GNP and any increase in regional output indicates economic growth, and is to be encouraged, the government has proclaimed equal interest in such quality of life factors as the self-respect of individuals, improvement in the standard of living of families, and a more equitable distribution of the national wealth. It is assumed by the government that economic development should be associated with the relief of poverty and the reduction of inequality. Under these assumptions, regional equality is considered as an objective in its own right.

Review of the Literature

The review of literature relevant to this study includes brief mention of some of the major comprehensive works of a historical, geographical or sociological nature concerning the so-called Arab world and specifically, the Middle East portion of it. Somewhat more attention is given to titles of a more recent nature dealing with economic development in that part of the world. Chapter II, in a sense, is a continuation of the literature review, although its primary purpose is to consider the development process in general and economic models which have been designed to portray that process. Among those models, it is the Gunnar Myrdal model that is used in examining and testing the characteristics of Saudi Arabian development.

Geography

Any short list of general works on the geography of the Middle East should include the writings of several French authors, particularly Blanchard, Weulersse, Birot, Dresch, and Planhol.[16] Descriptive works of a textbook

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[16]Raoul Blanchard, "L'Asie Occidental," in Géographie Universelle, P. Vidal de la Blache and Lucien Gallois, eds., Tome VIII, (Paris: Armand Colin, 1929); Jacques Weulersse, Paysans de Syrie et du Proche-Orient (Paris: Gallimard, 1946); Pierre Birot and Jean Dresch, La Mediterranée et le Moyen-Orient, Tome II (Paris: Presses Universitaires de France, 1956, Orbis series); and Xavier de Planhol, Les Fondements Géographiques de l'histoire de l'Islam (Paris: Flammarion, 1968).

nature by British authors include those of Brice,[17] Longrigg,[18] Fisher,[19] and Beaumont, Black, and Wagstaff.[20] The only overview of the geography of the Middle East by an American scholar who devotes a full volume to the region seems to be that of Cressey.[21] Taylor has edited a number of separately-authored articles on the Middle East, later published as a book by the American Geographical Society.[22] All of these studies provide valuable background on the physical and social environment and the economic development of the larger region of which Saudi Arabia is a part.

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[17]William C. Brice, South-West Asia (London: University of London Press, 1967, No. 8 of Systematic Regional Geography series).

[18]Stephen H. Longrigg, The Middle East: A Social Geography (London: G. Duckworth, 1963).

[19]William B. Fisher, The Middle East: A Physical Social, and Regional Geography, 6th ed., (London: Methuen, 1971).

[20]Peter Beaumont, Gerald H. Black, Malcolm Wagstaff, The Middle East: A Geographical Study (London: John Wiley and Sons, 1976).

[21]George B. Cressey, Crossroads: Land and Life in Southwest Asia (Chicago: Lippincott, 1960).

[22]Alice Taylor, ed., Focus on the Middle East (New York: Praeger Publishers for the American Geographical Society, 1971).

History

Because of the very long period of recorded history concerning the Arab World and the Middle East, the mention of a few specific titles should be thought of here as illustrative rather than comprehensive. The emphasis is on works of recent or near-recent dates.

An accounting of one specific part of the history of the Middle East is contained in Burckhardt's Notes on the Bedouins and Wahabys,[23] which traces the customs, manners, and institutions of the peoples. The second part is a history of the Wahhabis, tracing them from their earliest appearance as reformers in the last century.

Good general histories of the Middle East, with emphasis on the Arab peoples, have been written by Fisher, Hitti, Glubb, Bistlai, and Armajani. Hitti's History of the Arabs[24] is an excellent chronological account of the story of the Arab-speaking peoples from earliest times to the Ottoman conquest in the 16th century. Winder's Saudi Arabia in the Nineteenth Century[25] is a more specialized historical

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[23]John L. Burckhardt, Notes on the Bedouins and Wahabys (London: Henry Colburn and Richard Bentley, 1831).

[24]Philip K. Hitti, History of the Arabs, 9th ed. (London: MacMillan, 1968).

[25]R. Bayly Winder, Saudi Arabia in the Nineteenth Century (New York: St. Martin Press, 1965).

study, with an extensive bibliography. Fisher's The Middle East: A History[26] offers a brief introduction to the general region, with particular attention to the impact on social life of the prophet Mohammed. A Short History of the Arab Peoples[27] by Glubb presents the historic evolution to the time of the First World War in some detail. The story of later Arabian development is limited to a brief summary of the major events of the last half century.

Bistlai's Islamic History of the Middle East[28] reviews the rise and fall of the sequence of Arab dynasties over a period of several centuries and discusses their differences in outlook. Middle East: Past and Present,[29] by Armajani, deals with the spread of Islam and the rise and expansion of the Ottoman empire and that of the Safavids

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[26]Sydney N. Fisher, The Middle East: A History (New York: Alfred A. Knopf, 1959).

[27]Sir John Glubb, A Short History of the Arab Peoples (New York: Stein and Day, 1969).

[28]Wilson B. Bistlai, Islamic History of the Middle East: Background, Development and Fall of the Arab Empire (Boston: Allyn and Bacon, Inc., 1968).

[29]Yahyn Armajani, Middle East: Past and Present (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1970).

of Iran. It also discusses the appearance of Western imperialism in the Middle East and concludes with the modern period, giving individual treatment to the several independent nation-states.

Social, Political and Economic Studies

Another category of background studies essential to understanding the course of development in contemporary Saudi Arabia is that dealing with the nature of Arabian society, its economic progress, and the evolution of political thought in the region. Particularly worthy of note among such studies are the 19th century writings of Burckhardt, Doughty, and Burton, and the later works of Hogarth, Philby, Coon, Young, and Gibb and Brown. Some of the most recent works on the Middle East and Saudi Arabia, dealing with changes in the political and social scene during the last quarter of a century, are included among the writings of Thesiger, Lipsky, DaKrouri, Twitchell, Lenczowski, Kemal, Hopwood, and Tareo. These and many other writers have discussed the strains on traditional Arab society resulting from the sudden oil wealth of the Middle East and the implications of the intense level of world interest in, and dependence on, that region. A number of these background studies deserve a brief comment.

Two 19th century works which are essentially travel books but which provide a glimpse into Saudi Arabia's basic socioeconomic structure at the time are Burckhardt's Travel in Arabia[30] and Doughty's Travels in Arabia Deserta.[31] The first is an account of the Hejaz, including the cities of Mecca and Medina, with interesting observations of the Muslim character and manners. Doughty's book is a more general study of the nomadic Bedouin civilization. Burton's[32] journal is another classic on the Hejaz region, and contains an excellent portrayal of Mecca and Medina. The same author also translated the Arabian Nights into English.

Hogarth's Arabia[33] is a survey setting forth the observations and accomplishments of several Western travelers

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[30]John L. Burckhardt, Travel in Arabia (London: Henry Colburn, 1829).

[31]Charles M. Doughty, Travels in Arabia Deserta (New York: Doubleday and Company, Inc., 1955). Originally published as Arabia Deserta by Cambridge University Press in 1888.

[32]Sir Richard F. Burton, Personal Narrative of a Pilgrimage to Al-Madinah and Meccah (London: Bell, 1898).

[33]D. G. Hogarth, Arabia (Oxford: Clarendon Press, 1922).

in the Arabian peninsula. Musil's writings consist of six volumes on the peninsula, written in great detail and covering many aspects of the land and people of Saudi Arabia.[34] Musil was a Czech scholar and explorer. Philby's book[35] is the story of the author's earliest years in Arabia, during which time he explored much of the central part of the country. Thesiger's travel account[36] is illustrated with the author's own photographs, taken during his journeys in southern Arabia.

Near Eastern Culture and Society, edited by Young,[37] emphasizes the importance to the West of understanding the people of the Near East, and the varied aspects of their culture. It urges the realization that Arabs and other Muslims are neighbors of Europe, sharing many common interests and problems. Coon's Caravan[38] is an anthropologist's

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[34]Alois Musil, Arabia Deserta (New York: American Geographical Society, 1927). The other five volumes have different titles.

[35]H. St. John B. Philby, Arabia of the Wahhabis, (London: Constable, 1928).

[36]Wilfred Thesiger, Arabian Sands (New York: E. B. Dutton, 1959).

[37]T. C. Young, ed. Near Eastern Culture and Society (Princeton, N.J.: Princeton University Press, 1951).

[38]Carleton S. Coon, Caravan: The Story of the Middle East (New York: Henry Holt, 1951).

assessment of the Middle East peoples and their culture. Twitchell's book,[39] now somewhat dated, provides an introduction to Saudi Arabia's regional variety with emphasis on the mineral resources. Lenczowski[40] writes perceptively of the economic and political problems encountered by Aramco and other oil companies in the Middle East.

Saudi Arabia: Its People, Its Society, Its Culture[41] emphasizes the dynamics of Arabian culture, calling attention to attitude changes, behavioral modifications, and contemporary strains on long-held values. Political and Social Thought in the Contemporary Middle East[42] gives a broad picture not only of the major political and social currents in the area, but also of various individual social groups.

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[39]Karl S. Twitchell, Saudi Arabia: With an Account of the Development of Its Natural Resources, 3d ed., (Princeton: Princeton University Press, 1958).

[40]George Lenczowski, The Middle East in World Affairs, 2d ed., (Ithaca, N.Y.: Cornell University Press, 1956).

[41]George A. Lipsky et al. Saudi Arabia: Its People, Its Society, Its Culture (New Haven: HRAF Press, 1959).

[42]Karpat H. Kemal, Political and Social Thought in the Contemporary Middle East (New York: Frederick A. Praeger, 1968).

Socioeconomic Development and Its Impact

A number of studies of the Middle East are particularly focused on the development process, among them Gibb and Brown's Islamic Society and the West[43] and Beginnings of Modernization in the Middle East[44] by Polk and Chambers. The first of these is an investigation into the social structure and economic problems of Turkey, Egypt, and other countries of the region in the 18th century. It is based on inadequate documentation, a lack which the authors recognized and stated that they hoped to correct in later editions. The second of these books gives a view of Muslim knowledge and insights concerning modernization in the 19th century.

An introduction to the broad social, economic and political problems of Arabia and the Persian Gulf in the more recent period is offered in Hopwood's The Arabian Peninsula: Society and Politics.[45] The emergence of modern

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[43]Sir Hamilton Gibb and Harold Brown, Islamic Society and the West (Oxford University Press: 1950).

[44]William Polk and Richard Chambers, Beginnings of Modernization in the Middle East (Chicago: University of Chicago Press, 1968).

[45]Derek Hopwood, The Arabian Peninsula: Society and Politics (London: George Allen and Unwin, 1972).

attitudes is addressed by Kirk in his Contemporary Arab Politics,[46] in which he contends that the Arab-speaking peoples are in a state of revolution, rejecting not only 19th century Western imperialism, but also more recent constitutionalism. The Middle East in World Politics: A Study in Contemporary International Relations[47] and Political and Economic Development in the Emerging Nations: Nationalism and Socialism in the Arab Case Study[48] both center on the Middle East's current role in world affairs. Oil in these studies is described as a foreign policy tool.

General Development Studies

The writer would like to acknowledge the relevance to this dissertation of some of the general works on development by other geographers and--especially--by professional economists. Our Underdeveloped World[49] by

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[46]George E. Kirk, Contemporary Arab Politics: A Concise History (New York: Frederick A. Praeger, 1961).

[47]Ismael Tareo, The Middle East in World Politics: A Study in Contemporary International Relations (Syracuse, N.Y.: University Press, 1974).

[48]Mohamed DaKrouri, Political and Economic Development in the Emerging Nations: Nationalism and Socialism in the Arab Case Study (Ph.D. Dissertation, University of North Carolina, 1965).

[49]L. Dudley Stamp, Our Underdeveloped World (London: Faber and Faber, 1953).

L. Dudley Stamp was one geographer's attempt to locate the underdeveloped areas and define the conditions of their underdevelopment. Norton Ginsburg's Atlas of Economic Development[50] portrayed graphically many factors in social and economic development on a world scale. Ginsburg, a scholar best known for his studies of South and East Asia, has also edited a series of essays, mainly by professional geographers, on the general problem of development.[51]

"An Assessment of the Role of the Habitat as a Factor in Differential Economic Development,"[52] by Preston James, is an article by another well-known professional geographer, in this case written for an audience of economists and businessmen. James hypothesized that,

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[50]Norton Ginsburg, ed., Atlas of Economic Development (Chicago: University of Chicago Press, 1961).

[51]Norton Ginsburg, ed., Essays on Geography and Economic Development (University of Chicago, Department of Geography, Research Paper No. 62, Chicago, 1960).

[52]P. E. James, "An Assessment of the Role of the Habitat as a Factor in Differential Economic Development," American Economic Review, Vol. 41, Papers and Proceedings Supplement, (May, 1951), pp. 229-38.

although conditions of the habitat are important in the explanation of differences in economic development, the natural habitat cannot really be used to excuse economic underdevelopment.

An enormous amount of statistical data on underdeveloped countries was assembled by the economist Colin Clark and published in his book entitled The Conditions of Economic Progress.[53] It is particularly useful for its international comparisons in the period from the 1930's to the 1950's.

Several other economists have written books that deal in broad terms with the economic aspects and problems of underdeveloped countries. Among the best of these are Bauer and Yamey, The Economics of Underdeveloped Countries;[54] Frankel, The Economic Impact on Underdeveloped Society;[55]

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[53]Colin Clark, The Conditions of Economic Progress, 3d ed., (London: MacMillan, 1957).

[54]P. T. Bauer and B. S. Yamey, The Economics of Underdeveloped Countries (Chicago: University of Chicago Press, 1957).

[55]Herbert S. Frankel, The Economic Impact on Underdeveloped Societies; Essays on International Investment and Social Change (Oxford: Blackwell, 1953).

and Lewis, the Theory of Economic Growth,[56] all written during the decade of the 1950's. While each treats the pertinent economic factors in a broad context, the authors have given particular attention to the institutional role in the development process.

An older book still frequently cited in the development literature, one which considers mainly the role of private capital, decision making, and entrepreneurship, is Schumpeter, The Theory of Economic Development.[57] The inadequacy of Schumpeter's theory of economic development for most underdeveloped countries where central direction seems imperative, is demonstrated by Singer in his article, "Obstacles to Economic Development."[58] More than a quarter century ago, Aubey discussed the contribution of governments to economic development and suggested reasons why state

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[56]Arthur Lewis, Theory of Economic Growth (Homewood, Illinois: R. D. Irwin, 1955).

[57]Joseph A. Schumpeter, The Theory of Economic Development: An Inquiry into Profits, Capital, Credits, Interest, and the Business Cycle (Cambridge, Mass.: Harvard University Press, 1936).

[58]H. W. Singer, "Obstacles to Economic Development," Social Research, Vol. 20 (Spring, 1953), pp. 19-31.

funds should be expected to play an even more important part in the future economic development of underdeveloped countries.[59]

Bauer's Economic Analysis and Policy in Underdeveloped Countries[60] deals with the scope and method of economic analysis and considers the difficulty of applying traditional economic theory to the problems of underdeveloped countries. Eugene Staley, a prolific and perceptive writer on economic development, attempted to draw up a set of guidelines for the economic development of underdeveloped regions.[61] His discussion of why the underdeveloped areas have been selected as a primary target for Communist infiltration and conquest, and how this strategy is being developed, was included in a later study, The Future of Underdeveloped Countries: Political

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[59]H. G. Aubey, "The Role of the State in Economic Development," American Economic Review, Vol. 41, Papers and Proceedings Supplement, (May, 1951), pp. 266-73.

[60]P. T. Bauer, Economic Analysis and Policy in Underdeveloped Countries (Durham, N.C.: Duke University Press, 1957).

[61]Eugene Staley, "Political and Economic Planning: Planned Development in the Less Developed Countries," Planning, February 16, 1953, pp. 153-68.

Implications of Economic Development.[62] The Staley book calls attention to the attitudes and sensitivities within the underdeveloped regions that must receive some attention as measures are developed to counter Communist influence. It includes a record of past instances in which low income countries have successfully adopted new techniques and institutions, and have replaced economic stagnation with economic dynamism.

A case study of the interaction between social structure, the role of government, and economic growth is presented in a recent book by Rains, Government and Economic Development.[63] This study deals with the question of the relative role of public and private enterprise and the impact of different mixes of these capital sources on efficiency and overall growth. In addition, it discusses the individual development of some specific societies in relation to the role of selected public sector policies in stimulating change in the private sector. The impact of

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[62]Eugene Staley, The Future of Underdeveloped Countries: Political Implications of Economic Development (New York: Frederick A. Praeger, 1961).

[63]Gustav Rains, Government and Economic Development (New Haven: Yale University Press, 1971).

government on economic development, Rains noted, is obviously exercised through its fiscal power. To illustrate his point, he looks at government contributions to saving and capital formation in a substantial number of countries.

In Myint, Economic Theory and the Underdeveloped Countries,[64] the application of international trade theory to the underdeveloped countries is examined, as well as the relationship between the internal and external aspects of development planning. Poor countries traditionally have encouraged large foreign aid transfers in the form of loans, grants, or technical assistance, any of which may turn out to be a kind of disguised subsidy from industrialized nations. In some cases, these forms of assistance are insufficient in overcoming fundamental economic problems, and the author suggests they may even be counterproductive. Money and Capital in Economic Development,[65] a recent study by McKinnon, recommends as more useful a liberalization of financial markets and the lifting of restraints on foreign trade.

Aspects of the role of economic theory in development

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[64]H. Myint, Economic Theory and the Underdeveloped Countries (London: Oxford University Press, 1971).

[65]Ronald McKinnon, Money and Capital in Economic Development (Washington, D. C.: The Brookings Institution, 1973).

are included in a book edited by Mountjoy, Developing the Underdeveloped Countries.[66] Population, social infrastructures, agriculture, industrial development, trade, transport, and urbanization are all considered. Singh's Federal Finance and Underdeveloped Economy[67] is a useful general discussion of the role of public finance in economic development.

Seers, in his article entitled "The Role of National Income Estimates in the Statistical Policy of an Underdeveloped Area,"[68] casts doubt on the value of national income estimates for underdeveloped countries. He maintains that it is wrong, or at least inadvisable, to devote scarce statistical resources to their compilation. Certain aspects of social accounting techniques are useful, however. Given the scanty statistics available, it is more important, he says, to concentrate on improving specific rather than aggregative data.

The United Nations Department of Economic Affairs,

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[66]Alan B. Mountjoy, ed. Developing the Underdeveloped Countries (New York: John Wiley and Sons, 1971).

[67]B. Singh, Federal Finance and Underdeveloped Economy (Bombay: Hind Kitabs, 1952).

[68]D. Seers, "The Role of National Income Estimates in the Statistical Policy of an Underdeveloped Area," A Review of Economic Studies, Vol. 18, 1950-51, pp. 159-68.

in its 1949 report, compiled the view on development of representatives of several international bodies (cf., the Food and Agriculture Organization, the International Bank for Reconstruction and Development, the International Monetary Fund, the International Labor Organization, the United Nations Sub-Commission on Economic Development, and the International Chamber of Commerce) in Methods of Financing Economic Development in Underdeveloped Countries.[69] The FAO contribution to the study makes a particular effort to put the problem of economic development into quantitative terms.

A book by Hagen, The Economics of Development,[70] presents a critique of the general theory of development, discussing possible sources of increase in output, the alternative sources of increase for investment, and the principles of allocation. Capital inflow and the problem of a foreign exchange gap, as well as the allocation of resources between import substitution and export expansion, are all considered.

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[69]United Nations, Department of Economic Affairs, Methods of Financing Economic Development in Underdeveloped Countries (New York, 1949).

[70]Evert E. Hagen, The Economics of Development (Homewood, Ill.: Richard D. Irwin, Inc., 1968).

Regional Development Studies

Farley's study of economic change in Latin America, The Economics of Latin America: Development Problems in Perspective,[71] written from the viewpoint of a development economist, was intended to improve understanding of the opportunities for and obstacles to development in that part of the western hemisphere. He described the achievements which had been registered up to about 1970, and the complicated uncertainties which continued to affect predictions about the rate of change and future development paths in Latin America. Farley explored the problems confronting Latin America's efforts at regional economic integration, and reviewed the economic status of Latin America at the end of the first decade of the Alliance for Progress.

Venezuela, among the countries of Latin America, owes its relatively high standard of living and economic growth rate to its petroleum revenues, supplemented after World War II by income from iron ore and other resources. Long controlled largely by outsiders, Venezuelan resources are now coming more fully under national ownership. The way in which concentration of economic activities created

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[71]Rawle Farley, The Economics of Latin America: Development Problems in Perspective (New York: Harper and Row, 1973).

a distinctive spatial structure in the country was described in John Friedmann's Regional Development Policy: A Case Study of Venezuela.[72] In "Urbanization and Economic Growth in Venezuela,"[73] Ronald Artle discussed rapid city development in a situation where economic and population growth were both far above regional levels. Mildred Levy and Walter Wadycki, in a related study, discussed migration in Venezuela in response to localized development in their "Comparison of Young-Middle Age Migration in Venezuela."[74] Edward Lynch suggested a plan for creating new urban settlements in "Propositions for Planning New Towns in Venezuela,"[75] while Grub and Miele analyzed the effect of industrial development on market patterns in "The Changing Marketing

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[72]John Friedmann, Regional Development Policy: A Case Study of Venezuela (Cambridge, Mass.: MIT Press, 1966).

[73]Ronald Artle, "Urbanization and Economic Growth in Venezuela," Regional Science Association Papers, Vol. 27 (1971), pp. 63-72.

[74]Mildred Levy and Walter Wadycki, "A Comparison of Young-Middle Age Migration in Venezuela," Annals of Regional Science, Vol. 6 (December, 1972), pp. 73-80.

[75]Edward Lynch, "Propositions for Planning New Towns in Venezuela," Journal of Developing Areas, Vol. 7 (July, 1973), pp. 549-70.

Structure of the Industrial Development of Venezuela."[76] John Kirby sees Venezuela's inability to achieve effective land reform as still hampering progress in living standards and production in rural areas in "Venezuela's Land Reform: Progress and Change."[77]

Nauru, a tiny Pacific island nation, is making a fortune on phosphate. The economy is almost totally linked to the production of phosphate, the supply of which will be exhausted about the end of the century.[78] In 1967, the per capita income of the island population was reported to be about $4,000 while that in the United States at the same time was $3,648.[79] Long-range planning and wise investment abroad created the possibility for economic stability and continued income after Nauru's single economic resource is

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[76]Phillip D. Grub and Arthur R. Miele, "The Changing Marketing Structure of the Industrial Development of Venezuela," Journal of Developing Areas, Vol. 3 (July, 1969), pp. 513-26, and Vol. 4 (October, 1969), pp. 69-80.

[77]John Kirby, "Venezuela's Land Reform: Progress and Change," Journal of Inter-American Studies, Vol. 15 (May, 1973), pp. 205-20.

[78]"The Island Whose Life is Linked to Phosphate," United Nations Review, Vol. 6 (June, 1960), pp. 48-52.

[79]"Utopia in Mid-Ocean," Time, June 30, 1967, p. 29.

exhausted. By 1995, Nauru can count on investments worth perhaps $500 million--providing an annual income of $25 million. That is over $7,000 a year for every man, woman and child, assuming a stable population--admittedly an improbable assumption.[80]

As in Latin America, economic development in Africa has proceeded very unevenly, depending largely on the level of external interest in exploiting particular agricultural, forest, or mineral resources. A short general survey of the main elements in the African economy as they relate to the problems of reducing poverty was the basis of Batten's study, The Problem of African Development,[81] written shortly after World War II. The book provided an overview of the status of economic development in the entire continental area. Very few synthetic studies have been written on the economic development of Africa as a whole because of the political diversity and the scattered location of resource materials. Batten

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[80]Christopher Lucas, "Lilliput in the South Pacific," Readers Digest, January, 1970, pp. 211-18.

[81]T. R. Batten, The Problem of African Development (London: Oxford University Press, 1948).

concluded that Africa has many unique developmental obstacles, but also some advantages over other underdeveloped areas. A useful geographic overview of the entire continent, with a strong economic emphasis, was provided by Hance in his African Economic Development.[82] A much more theoretical approach than that of Hance is the work by Bell and Todaro, Economic Theory: An Integrated Text with Special Reference to Tropical Africa and Other Developing Areas.[83] It presents economic theory as a unified body of accumulated concepts and ideas, discussing in some depth price theory, income theory, international trade theory, and domestic economic theory in relation to the general situation of the underdeveloped world.

Studies in some depth have been written on the problems of development in a number of the individual African countries. For example, Constraints on the Economic Development of Zambia,[84] a book edited by Elliott, deals

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[82]William A. Hance, African Economic Development, rev. ed. (New York: Frederick A. Praeger, 1967).

[83]Phillip Bell and Michael Todaro, Economic Theory: An Integrated Text with Special Reference to Tropical Africa and Other Developing Areas (Nairobi: Oxford University Press, 1969).

[84]Charles Elliott, ed. Constraints on the Economic Development of Zambia (Nairobi: Oxford University Press, 1971).

with the basic features of Zambia's economy and the implications of these features for the nation's economic policy. The book also sketches the history of economic planning in Zambia, describing the emergence of a strategy for development in the years immediately prior to and after the achievement of political independence in 1964. The domination of the national economy by the copper industry unfortunately failed to generate a substantial level of supply of locally produced inputs for the mining industry. After independence, the shortage of educated and skilled manpower hampered implementation of the ambitious development plan of the government and inevitably led to an acute crisis in the Zambian labor market.

Nigeria, the most populous of all the African countries, has a quite diversified pattern of resources, and with rapidly growing oil revenues is a striking example of development among the countries of tropical Africa. An in-depth study of the growth of the Nigerian economy, now rather badly outdated, is that of W. Arthur Lewis in his monograph entitled Reflections on Nigerian Economic Growth.[85]

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[85]W. Arthur Lewis, Reflections on Nigerian Economic Growth (Paris: Development Center of the Organization for Economic Cooperation and Development, 1967).

In "Nigeria's Second National Development Plan: A Financial Analysis,"[86] Rattan J. Bhatia and Peter Engstrom examined the major financial variables with a view to establishing appropriate monetary and fiscal policies. They concluded that domestic financing should not be a constraint on the development effort, and that external investments should be regarded as both desirable and essential. R. O. Ekirndane also argued for the need for competitive capitalism in Nigeria in "The Political Economics of Private Investment in Nigeria."[87] An Economist[88] article reviewed the status of northern Nigeria at the time of the Biafran War, noting the need for attention to the economy of that sector of the country if it was to be integrated into the mainstream of the national economy.

Many different points of view appear in the development literature. The interesting and unusual thesis

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[86]Rattan J. Bhatia and Peter Engstrom, "Nigeria's Second National Development Plan: A Financial Analysis," International Monetary Fund Staff Papers, Vol. 19 (March, 1972), pp. 145-60.

[87]R. O. Ekirndane, "The Political Economics of Private Investment in Nigeria," Journal of Modern African Studies, Vol. 10 (July, 1972), pp. 37-56.

[88]"North Nigeria," Economist, August 22, 1969, p. 22.

that "rational planning" can defeat the socioeconomic purpose was argued by Oladejo O. Okediji in "The Role of Rational Planning in Economic Development: A Nigerian Example."[89] Most writers, on the other hand, clearly regard central planning as essential.

Numerous books and dissertations, as well as countless articles in the Middle East Journal and other journals, have been written on the Middle East and its developmental problems. One of the earliest of these was the now rather dated analysis of Bonné, The Economic Development of the Middle East: An Outline of Planned Reconstruction After the War.[90] Factors in the economic position of the Middle East are set forth, and the possibilities of progress through planned development are discussed. In 1948, three years after that book was published, Bonné wrote State and Economics in the Middle East: A Society in Transition.[91]

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[89]Oladejo O. Okediji, "The Role of Rational Planning in Economic Development: A Nigerian Example," Human Organization, Vol. 28 (Spring, 1969), p. 28.

[90]A. Bonné, The Economic Development of the Middle East: An Outline of Planned Reconstruction After the War (London: Kegan Paul, Trench, Trubner and Company, Ltd., 1945).

[91]A. Bonné, State and Economics in the Middle East: A Society in Transition, 2d ed., rev. (London: Routledge and Kegan Paul, 1955).

This study was divided into four sections dealing respectively with the development of nations-states in the Middle East from the end of the Ottoman Empire to World War II, the agrarian sector in the contemporary period, the growth of industry and associated problems, and the struggle with change in Middle Eastern society.

The Royal Institute of International Affairs, in about the same period, published a useful overview, The Middle East: A Political and Economic Survey,[92] which after an introductory section on the region as a whole deals with the individual countries in regard to economic change and development. The Review of Economic Conditions in the Middle East,[93] an early United Nations study, includes an introduction to the basic economic characteristics of the Middle East area, chapters on trends in various sectors of the economy, and a concluding section on regional economic development programs.

Also in the period immediately following World War

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[92]The Middle East: A Political and Economic Survey (London: Royal Institute of International Affairs, 1951).

[93]United Nations Department of Economic Affairs, Review of Economic Conditions in the Middle East, supplement to World Economic Report, 1944-50 (New York, 1951).

II Keen, in his Agricultural Development of the Middle East,[94] describes the agricultural patterns and productivity of the political areas in the region. He discusses the obstacles to and methods of agricultural improvement, and analyzes the technical and educational problems involved.

The Economics of Middle Eastern Oil[95] by Issawi and Yegereh is an analysis of the most important contemporary sector of the Middle Eastern economy. It is the sector which now plays a vital role in the economic development of the producing countries and is a prominent consideration for the whole region. The book deals primarily with the period 1948-1960, which witnessed a tremendous growth of the oil industry and an expansion of its world-wide markets.

Iran, the first of the Middle East countries to experience the impact of oil discovery and production on what was largely a subsistence economy, has been studied by many scholars in the field of development and national planning. A rather recent overview, Bharier's Economic

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[94]B. A. Keen, The Agricultural Development of the Middle East, A Report to the Director General, Middle East Supply Center (London: H. M. Stationery Office, 1946).

[95]Charles Issawi and Mohammed Yegereh, The Economics of Middle Eastern Oil (New York: Frederick A. Praeger, 1962).

Development in Iran, 1900-1970,[96] documents the changes which have occurred since the beginning of the 20th century, both in the economy as a whole and in individual sectors. In 1977, Iran and Saudi Arabia are competing vigorously for leadership in the establishment of oil pricing policies among the major exporting countries.

Brief mention should perhaps be made here of some of the literature concerning rapid resource development and economic change in certain other countries of the world where oil or some other mineral resource, as in Saudi Arabia, is inducing rapid modification of a traditional society.

Libya, until recently, was one of the poorest of the Arab countries, supported largely by some agricultural communities in the northwest. This region, generally known as Tripolitania, developed a commercial economy during the period of Italian occupation. With its new found oil wealth, first developed in the late 1950's, Libya has become one of the more influential nations of the Arab world, and has suddenly become the wealthiest nation of Africa on a per capita basis. Some of the distinctive features of the expanding Libyan economy have been

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[96]Julian Bharier, Economic Development in Iran, 1900-1970 (London: Oxford University Press, 1971).

described and analyzed by George Heitmann using techniques of statistical macro-economics.[97] Alan Segal has called attention to the need for the development of other revenue sources to support economic growth before the Libyan oil reserves are depleted.[98]

The relationship between oil regulations and regional development in Libya has been studied in detail in a dissertation by Robert Brown.[99] John Clarke has examined the question of whether the oil economy of Libya will impose itself on and even exploit the traditional rural economy - i.e., bring even greater concentration of wealth. He concluded that deployment of development funds to all sectors of the society was essential in future economic planning.[100]

Rawle Farley, in a book entitled Planning for

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[97]George Heitmann, "Libya, An Analysis of the Oil Economy," Journal of Modern African Studies, Vol. 7 (July, 1969), pp. 249-63.

[98]Aaron Segal, "Libya's Economic Potential," World Today, Vol. 28 (October, 1972), p. 445.

[99]Robert Brown, A Spatial View of Oil Development in the Desert: Libya in the First Decade, 1955-1965 (Ph.D. dissertation, Columbia University, 1970).

[100]John Clarke, "Oil in Libya: Some Implications," Economic Geography, Vol. 39 (January, 1963), pp. 40-59.

Development in Libya: The Exceptional Economy in the Developing World, analyzed the evolution of the oil industry in that African desert country, and explored its effect on the development of the non-oil sectors of the economy as well as on the evolution of the planning machinery in general.[101] The purpose of the Farley study was not only to examine the rise of an exceptional economy out of what had been near inertia, but also to assess the significance of the Libyan experience for rapid development planning in other countries.

Kuwait, for many years a little-known British protectorate on the Persian Gulf, is one of the smallest countries of the Middle East, but it is now one of the wealthiest on a per capita basis. With an economy based almost exclusively on oil, Kuwait during the past thirty years has made striking progress and is now one of the financial leaders in the Arab world. It is a major contributor to the Islamic Bank and the Arabian Development Fund.

The strength of Kuwait's economy has been examined and described by many scholars. Account is often taken of

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[101]Rawle Farley, Planning for Development in Libya: The Exceptional Economy in the Developing World (New York: Praeger Publishers, 1971).

the accompanying internal problems and local obstacles to development, for instance in a brief Economist article entitled "What It Is To Be Rich."[102] The problem of rapid development within a traditional society in the presence of an unfavorable physical environment has been considered by V. Nath[103] and Saba Shiber.[104] Shiber's book, The Kuwait Urbanization, recommends better central planning in a country whose urbanization in the early oil period occurred without it. Long-range problems created by the eventual decline in oil production and continued growth of the population--a more than ten-fold increase since World War II--are described and analyzed in a popular article by Allan Hill.[105] Economic Development and Regional Cooperation in Kuwait[106] by El Mallakh elaborated on the

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[102]"What It Is To Be Rich," Economist, February 22, 1969, p. 63.

[103]V. Nath, "Economic Development and Regional Cooperation: Kuwait," Economic Development and Cultural Change, Vol. 20 (January, 1972), pp. 342-49.

[104]Saba Shiber, The Kuwait Urbanization (Kuwait: Published by author, 1964).

[105]Allan Hill, "Clouds Over Kuwait," Geographical Magazine, Vol. 44 (August, 1972), pp. 753-58.

[106]Ragael El Mallakh, Economic Development and Regional Cooperation in Kuwait (Chicago: The University of Chicago Press, 1968).

Kuwaiti example and its significance to development economics and all research concerned with international finance and rapid social change.

Saudi Arabia, whose development is the subject of this study, is almost entirely a desert. Its traditional social and economic aspects until recently placed it among the poorest of all the Middle East and North African nations. Its wealth of petroleum resources, developed during and especially since World War II, has given the government the opportunity to move the nation very rapidly along the road toward modernization in both economic and social areas. Within a span of less than forty years, the national budget of Saudi Arabia has increased from about $3,000,000 (1938) to $25,676,0000(1975).[107]

Young's "Saudi Arabian Currency and Finance"[108] was an early study of some of the economic repercussions of the discovery of oil. It describes the establishment of a type of central bank, the Saudi Arabian Monetary Agency, the choice of a monetary standard, the currency reform of

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[107]Saudi Arabia Monetary Agency Annual Report 1395, A. H., Jeddah, Saudi Arabia, 1975.

[108]A. N. Young, "Saudi Arabian Currency and Finance," Middle East Journal, Vol. 7 (Summer, 1953), pp. 361-80, and (Autumn, 1953), pp. 539-56.

1952, and the state of the country's public finances at the time of writing. The extent to which Saudi Arabia's fiscal resources have been extended into development funds, with implications for its "wait and see" foreign policy, was discussed in "Not All That Rich,"[109] a short article in the Economist.

The problems of economic development which stem from previous educational deficiencies, the effects of a large influx of foreign labor, and the economics of internal development with regard to Saudi Arabia are studied in "A New Entrant to Planned Economies."[110]

The standard macroeconomic model and its applicability to the Saudi economy are assessed in this study. Government spending, presented as the only independent variable, serves as the main income-producer, upon which the behavior of the other variables depends. Income and employment growth rates, for example, are determined by the growth rate of government spending. The model sets

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[109]"Not All That Rich," Economist, April 5, 1969, p. 24.

[110]"A New Entrant to Planned Economies," Economist, April 19, 1969, p. 34.

forth the money supply itself as a function of government expenditure.[111]

Ramon Knauerbase's article, "The Economic Development of Saudi Arabia: An Overview,"[112] summarizes Saudi Arabia's economic development in the thirty-year span that has seen the country emerge as a world power. Knauerbase outlines the two five-year development plans, noting that diversification in five socioeconomic regions is the key to planning in the period 1975-1980. He points out Saudi Arabia's phenomenal growth rate, still coupled with an inability to reduce the economy's dependence on oil and still confronting basic problems of poverty and unemployment in some sectors. He contends that too much government planning has been limited to individual welfare, a weakness because the government is in fact the economy, and the fruits of the nation's oil wealth therefore have been very unevenly distributed. Only a few of the works written on economic development in Saudi Arabia have been noted here. Others will be discussed later in the dissertation.

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[111]Khaled M. Al-Fayez, Economic Development of Saudi Arabia: A Case Study of the Government Propelled Economy, (Ph.D. dissertation, Fletcher School of Law and Diplomacy, 1974).

[112]Ramon Knauerbase, "The Economic Development of Saudi Arabia: An Overview," Current History, Vol. 72, January, 1977, pp. 6-10.

DEFINITIONS

A number of key terms relevant to the present study of Saudi Arabia occur in the development literature, including the writings of Gunnar Myrdal. It may be helpful to list some of these terms with brief definitions:

(1) Backwash Effects: The detrimental effects suffered by poorer areas as a result of interaction with richer regions.

(2) Spread Effects: The beneficial effects on poorer regions of interaction with richer areas.

(3) Convergence: The tendency for two or more regions to move toward equality in certain economic variables involving labor, capital, goods, and services.

(4) Divergence: The opposite of convergence, that is, the tendency for two or more regions to move toward greater inequality in certain economic variables.

(5) Disequilibrium: A state of imbalance in economic wealth and potential between two or more regions, a result of divergence; the opposite of equilibrium.

(6) Model: An analytical description of a dynamic process whose form might range from a general conceptual framework to a specific set of mathematical equations.

HYPOTHESES

Myrdal's model would predict divergence for the five Saudi Arabian regions for which data has been published with respect to the twelve economic-social variables available for consideration. Based on personal familiarity with his homeland, the writer felt that the Myrdal model would not be verified in the Saudi Arabian case. Accordingly, the following null hypotheses were formulated:

(1) During the period 1964-1973, there was no significant difference in trend between the five regions of Saudi Arabia with respect to economic and social development. Since the central region is the seat of royal power in Saudi Arabia, a corollary hypothesis is introduced comparing that specific area with the four other regions.

(2) During the period 1964-1973, there was no significant difference between the developmental trends of the central region and the other four regions of the country.

Along with these two hypotheses, examined through specific statistical tests, the following relationships are also considered in the dissertation:

(1) The influence of massive government spending on the rate of economic and social growth.

(2) The degree of modernization of Saudi Arabia as

a result of large applications of capital under central direction.

(3) The degree of equalizing progress after the initiation of large scale expenditures by the Saudi Arabian government.

DESIGN AND METHODOLOGY OF THE STUDY

The design of the dissertation, following this rather long introduction, is as follows. Chapter II provides a review of some models of spatial economic development focusing on that of Myrdal, but considering others as well. Chapter III presents a general description of the Saudi Arabian social, political, and economic setting. Chapter IV portrays in some detail the philosophy and structure of Saudi Arabian development planning. Chapter V presents the data for the twelve economic and social variables, and provides a general picture of trends in Saudi regional development. Chapter VI compares the actual socio-economic trends with the expectations from the Myrdal model. Chapter VII consists of a conclusion and a proposed development model for Saudi Arabia. Appendix A includes the raw data for the twelve variables and Appendix B the per capita data for the five regions.

The study, in summary, is essentially an empirical

diagnosis of national growth and regional inequality in their spatial and temporal dimensions. Statistical data and other information for this study have been secured from documentary sources, supplemented by a broad range of other published materials examined in various libraries in Saudi Arabia and the Bizzell Memorial Library of the University of Oklahoma.

Some of the field work and library research for the study was done in Riyadh, the capital of Saudi Arabia, particularly in the December, 1974, to January, 1975, period. Considerable information was accumulated through personal interviews with government officials. The writer visited many different ministries, and through personal interviews within these ministries was able to get a reasonably clear view of the basic direction for development that the Saudi Arabian government has chosen. Published materials were examined at the Library of the University of Riyadh, the Library of the Public Institute, and the Library of Industrial Research in the government Ministry of Commerce and Industrialization.

Most of the regional data for the study was drawn from the statistical yearbooks issued by the Saudi Arabian

Ministry of Finance and National Economy.[113] These data included descriptive statistics for the following twelve variables:

(1) The employment of labor in industry and manufacturing.

(2) The number of business establishments and companies.

(3) The number of cooperative societies.

(4) The number of schools.

(5) The number of teachers.

(6) The number of students.

(7) The number of hospitals.

(8) The number of hospital beds.

(9) The number of physicians.

(10) The number of pharmacies.

(11) The number of roads completed in a region.

(12) The total length of the roads (in kilometers) existing in a given region.

With some gaps, not necessarily all explainable, statistical series are available for the twelve listed items

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[113]Kingdom of Saudi Arabia, Ministry of Finance and National Economy, Statistical Yearbooks, 1964-1973 (Riyadh: Central Department of Statistics).

and furnish a basis for a quantitative view of Saudi Arabian development. These data were obtained for each of the five regions of the country for the ten-year period, 1964-1973. A larger number of regional units would have been desirable in applying the data to the divergence-convergence tendencies, but the clustered nature of settlements in what is basically a desert country makes closer analysis impossible.

The hypotheses and relationships of special concern to the study were evaluated by treating the data as follows. The official figures for the twelve items considered were converted to a per capita form and shown on graphs. The resulting graphs revealed trends which were then used as a basis of evaluation. Next, the ten-year record of per capita gains (or losses) for each variable and for each region was subjected to analysis of variance (ANOVA) procedures. The ANOVA, it should be noted, does not identify year-by-year changes, as does the study of movement via graphical representation. Likewise, it does not show clearly the occurrence of convergence or divergence. It does serve, however, as an additional analytical tool, revealing such movements in terms of ten-year averages.

Finally, the Williamson Index of Regional Inequality was used as a further means of regional data analysis. This index, V_w, is a weighted coefficient of variation that measures the dispersion of the regional per capita data relative to the national average. Each regional deviation was weighted by its share in the national picture; the higher the V_w, the greater the size of geographic data differentials. Detailed examination of V_w for each region over the ten-year period with respect to each variable served as a means of determining the movement of regional inequalities.[15]

In more detail,

$$V_w = \frac{\sqrt{\frac{(yi-y)^2 fi}{n}}}{\bar{y}}$$

Where fi = population of the ith region.

n = national population.

yi = per capita data of the ith region.

$\bar{y}$ = per capita data of the nation.

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[15]Procedure adapted from J. G. Williamson, "Regional Inequality and the Process of National Development: A Description of the Patterns," in Regional Analysis, L. Needleman, ed. (Baltimore: Penguin Books, 1968), p. 111.

The overall purpose of this study is to describe and analyze the developmental process within Saudi Arabia, with special concern for the spatial impact of government funding. Specifically, the study seeks to analyze economic and social changes over a ten-year period (1964-1973) with respect to twelve variables and five regions of the country. It is hypothesized that the growth process in the Saudi Arabian regional system leads toward the convergence of economic levels throughout the five regions with regard to the selected variables.

The study seeks to explore the extent to which traditional development models are applicable to the Saudi Arabian case. Toward this purpose, a special study of spatially oriented models was included. It was assumed that since a real-world analysis could not be restricted to the interaction of purely economic factors, the study should include a consideration of key social and political factors as well. One outcome of this study is a planning model for the Saudi Arabian economy. It is hoped that the model also has validity for other rapidly developing national economies, stimulated by special resource situations and ready markets in the already developed, high-consumption countries.

Chapter II

MODELS OF SPATIAL AND ECONOMIC DEVELOPMENT

Concentration of economic activities in one region of a country, for whatever reason, frequently creates a special kind of spatial environment in which differential growth rates appear among other regions of that country. As Herbert C. Weinand put it, "Growth poles emerge as a result of the economics of agglomeration and because of internal and external scale economics, especially in manufacturing industries."[1]

In an economic sense, most countries have regional problems. Differences in prosperity between areas within a given country are an old problem. There are "depressed areas" and "pockets of poverty." Even in a highly integrated economy such as that of the United States, the per capita income disparity between the richest states and the poorest states is on the order of two to one. Only of late, it appears, have governments become willing and able to affect

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[1]Herbert C. Weinand, "Some Spatial Aspects of Economic Development in Nigeria," Journal of Developing Areas, Vol. 7 (January, 1973), p. 247.

the distribution of regional prosperity, as Needleman commented, and, "it is only since 1945 that integrated regional policies have been developed and resulted in legislation."[2]

While the special concern of the present study is with the economic aspects of regional science, social variables are also involved. Both kinds of variables, economic and social, are more convincingly presented when they can be studied through the use of models. The most useful and valid development models, those most supportive of traditional geographic research, employ spatial concepts. In such models, society is seen as a matrix of interrelated social networks, often spreading over international boundaries, physical-environmental regions, and language groupings. The regional variability influencing and influenced by economic growth is best dealt with through those models which take into consideration the varying spatial distribution of environmental factors over a given region.[3]

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[2]L. Needleman, ed., Regional Analysis, (Baltimore: Penguin Books, 1968), p. 8.

[3]D. E. Keeble, "Models of Economic Development," in Socio-Economic Models in Geography, ed. by Richard J. Chorley and Peter Haggett (London: Methuen, 1967), p. 243.

According to Keeble, writing a decade ago, geographers have shown insufficient interest in investigating the phenomenon of economic development. A primary cause of this, he felt, lay in geography's traditional preoccupation with the special characteristics of each country and area, its use of the so-called idiographic approach. "For decades, geographers have concerned themselves primarily with the description and analysis of those unique combinations of spatially-associated phenomena which are found in particular, individual areas and countries."[4] In contrast to this system of analysis, Keeble encouraged using the nomothetic approach, that is, studying the general similarities and differences among regions.

It was only recently, Keeble believed, that there had been some attempt by scholars to modify their approach through the use of generalized models that better reflect the spatial factors inherent in economic growth and change.

The Nature of Models

The recording and analysis of data presents problems in the utilization of local information to identify regional and national patterns. Replacing the idiographic with the

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[4]Ibid., p. 243.

nomothetic approach reflects for geography a parallel concern with that of other sciences which seek to establish generalizations about discrete phenomena and universal concepts of principles. Thus, the modern approach as, for instance, Haggett and Chorley see it, is to "view the phenomena of the real world in terms of their 'set characteristics,' rather than to concentrate upon their individual deviations from one another."[5]

Models can take various forms. They may appear as theory, a law, a hypothesis, or simply as a structured idea. They may be expressed in systems of equations, in stated relations, or in syntheses of data which reflect the goal of idealization. Models as structured forms can be suggestive, highly selective, or analogical.[6] In developing them,

> The mind decomposes the real world into a series of simplified systems and thus achieves in one act an overview of the essential characteristics of a domain. The general aim of the model builder is to reformulate some features of the real world into a more familiar, simplified, accessible, observable, easily-formulated or controllable form, from which conclusions can be deduced, which, in turn, can be reapplied to the real world.

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[5] Peter Haggett and Richard J. Chorley, "Models, Paradigms and the New Geography," in Socio-Economic Models in Geography, p. 21.

[6] Ibid., pp. 22-24.

Models and theories are closely connected, even those that form the basis of our biases. On this point, Pahl refers to geographers who, like other social scientists, cannot, and perhaps should not, try to ignore their own culture. "Relations between phenomena of the human world are relations of value and purpose."[7]

Social and Economic Models

Social and economic information, then, can often be expressed in terms of a model of a social structure or a system. The social norms inherent in action systems may be part of a structured model involving values. Models may range from Weber's ideal types--such as feudal, patrimonial, bureaucratic, or charismatic--to purely functional types like those described by Radcliffe-Brown.[8]

Using a functional type model, the social life of the community is seen as the composite operations of the social structure. A crime, a funeral, or some other ceremony has meaning primarily in terms of the part it plays in the total social life of the group. An individual act is valued in terms of the contribution it makes to the social

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[7]R. E. Pahl, "Sociological Models in Geography," in Socio-Economic Models in Geography, p. 218.

[8]A. R. Radcliffe-Brown, Structure and Function in Primitive Society (London: Cohen and West, 1961).

fabric. This functional approach interprets economic aims as socially structured goals. According to Pahl:

> Utility, then, is the economic value of physical, social or cultural objects in accord with their significance as facilities for solving the adaptive problems of social systems. The spatial constraint and the endowment of natural resources must be evaluated in the context of a society's adaptive and goal attainment function.

A useful summary of the various types of models has been provided by Keeble.[9] His simplified typology of economic growth models on the basis of both spatial content and scale coverage is shown in Figure 1. A particular mathematical model used in the present study is the Williamson Index of Regional Inequality. It is classified here under scale group III (sub-national unit) and model group (spatial) as a mathematical model.

Regional Growth Models in General

The study of regional economics has stimulated the development and application of a number of regional growth models, not all of them equally helpful or accurate, at least in the judgment of some of the practitioners. For

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[9]D. E. Keeble, "Models of Economic Development," in Socio-Economic Models in Geography, p. 246.

FIGURE 1

A TYPOLOGY OF ECONOMIC GROWTH MODELS

Scale Groups		Model Groups A: Non-Spatial Models of Economic Development Within A Given Area. Conceptual	A: Mathematical	B: Models Accounting for Unequal Spatial Distribution of Economic Development Within A Given Area. Conceptual	B: Mathematical
I	Supra-National (Areas are Continents or Even the Whole World.)				
II	National (Areas are State Units.)	e.g., Rostow's Stage Model		e.g., Hirschman's Inter-Regional Economic Inequality Model	
III	Sub-National (Areas are Regions or State Units.)		e.g., Regional Input-Output Models		

SOURCE: Keeble, "Models of Economic Development" in Chorley and Haggett, eds., Socio-Economic Models in Geography, p. 247.

example, Richardson feels the evolution of an adequate theory has been stymied because of insufficient emphasis on regional factors and overemphasis on general growth theory. He believes that this, in turn, has led to a superficial appraisal of inter-regional factor flows, as well as to underemphasis on such critical components as location, space and distance.

> It has in some instances meant a focus of attention on growth in an individual region, treating that region as an analogue to the nation, whereas for many purposes much more light is thrown on regional development by analyzing the process of growth in a system of inter-dependent regions. Moreover, many of the assumptions that are common in growth theory (perfect competition, the use of Cobb-Douglas production functions, constant returns to scale) may be singularly inappropriate to regional economics.[10]

Some important and frequently used types of models employed in regional economics are these: export base, neo-classical, cumulative causation (the Myrdal model), econometric, and input-output models. These will now be identified a bit further with a brief comment on their strengths and/or weaknesses.

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[10]Harry W. Richardson, Regional Growth Theory (New York: John Wesley & Son, 1973), p. 15. Richardson's evaluation of model types seems very helpful and is quoted a number of times in this portion of Chapter II.

Export Base Models

Some regional economists find that export base models are useful in that they can relate national growth to GNP even when there is a lack of internal regional data. Basically, this type of model involves the postulate that exports determine the regional (i.e., national), growth rate. However, the usefulness of attempting to define regional growth in terms of changing patterns of national demand--again according to Richardson--is "more than offset by the neglect of autonomous investment and technical progress and insufficient attention to the part played in regional growth by capital accumulation and immigration."[11]

Another objection to the export base model is a weakness in the theory's application to an expanding national economy. Richardson notes that an expanding national economy will, according to the model, tend to be associated with a declining rate of export growth. The change in value of the parameter connecting the rate of export growth with the rate of national output growth will often be unpredictable.[12] Still other objections suggested by Richardson are that export base models depend on external

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[11] Ibid., p. 17.

[12] Ibid., p. 18.

demand considerations, that they employ uncertain definitions and measurements of the export base, and that they are unique to a single country rather than being inter-regional in their application.

Neoclassical Models

As in the case of export base models, some of the basic assumptions of neoclassical models may not be applicable to regional theory. Certainly their limitations are identified by Richardson:

> For instance, the full employment assumption is not usually relevant to regional economics since to a marked extent regional problems emerge because of substantial inter-regional differences in the degree of resource (and particularly labor) utilization. Similarly, perfect competition cannot be assumed in regional economic analysis since space itself and the existence of transport costs limits competition; oligopoly, pure monopoly or monopolistic competition are much more appropriate market structures. Indeed, if we were to adopt neoclassical models in their pure unadulterated form there would be no such field as regional economics.[13]

The basic axioms of the neoclassicist cannot be verified in a more realistic model which includes space and time. Richardson points out that space is incompatible with perfect competition, complete certainty, marginal adjustments in prices, outputs and locations, and "the

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[13]Ibid., 22.

other background conditions of the neoclassical world."[14]

Admittedly, one advantage of neoclassical models is that they may provide ideas of growth theory that can easily be applied to regional economic analysis. Furthermore, such models can and do take into consideration factor mobility.

However, there are drawbacks to the orderly and exact formulations that can be derived from the neoclassical model: "The trouble is that if we disaggregate the model, drop some of the assumptions (e.g., constant returns, identical production functions) and translate the model from comparative statistics to dynamics, we may derive quite different results."[15] It is not adequate to state that inter-regional migration can be accounted for as a reaction to differences in inter-regional rates of return, as is proposed by neoclassical models. An adequate migration model ought to take into account such factors as work opportunities, spatial frictions, mobility costs, and non-economic resistance to migration. The profit maximization standards may overlook the role of high location costs or uncertainty over income and expenses. Typical neoclassical models also overlook such variables as transportation costs,

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[14]Ibid., p. 23.

[15]Ibid., p. 24.

urbanization, metropolitan-regional relationships, the contribution of technical progress, and the interdependence of location decisions.

> Whether we yet have a satisfactory explanation of the spatial diffusion of all types of innovation is doubtful, but it is clear that the analytical techniques needed to examine spatial diffusion (social networks analysis, communications theory, diffusion waves, Monte Carlo Models, urban hierarchy models, statistical curve fitting for spatial diffusion rates, etc.) have nothing to do with neoclassical theory. In my view, the dogged reliance on neoclassical models of regional growth has retarded understanding of the regional growth process.[16]

Econometric Models

These models should be regarded not so much as theories of regional growth as ways of investigating various theories of growth. As Richardson puts it, "most regional econometric models have been developed as forecasting models".[17] Not all econometric models are consistent with inter-regional economics. According to Richardson, most of these models rely on the export base theory and make regional manufacturing a function of GNP. "This is a most inadequate treatment of inter-regional trade, making no allowance for the importance of specific regional markets or for shifts in inter-regional

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[16]Ibid., pp. 27-28.

[17]Richardson, Regional Growth Theory, p. 36.

competitiveness.....not one (of these models) gives any attention to the dimension of space."[18]

A major problem with this type of model is that regional data is often not available, at least in sufficient quantities. Finally, simulations performed using some econometric models have led to strange, unrealistic results.[19]

Input-Output Models

This type of model is convenient for some purposes in that it exhibits exact linear relationships among variables. However, Richardson regards it as "incomplete as a theory of regional growth since the input-output model treats regional final demand as exogenous, whereas a satisfactory theory would need to determine the growth path of final demand."[20] Therefore, to be useful, the input-output model must be used in conjunction with other theories and models in order to satisfactorily account for regional growth.

Cumulative Causation Models

The inadequacy of such model types as the export

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[18] Ibid., pp. 37-39.

[19] Ibid., p. 39.

[20] Ibid., p. 40.

base model and the neoclassical model has resulted in new models that more adequately account for spatial variation in economic prosperity. Some of these newer models, which recognize a broad complex of socio-economic factors at work in the development process are identified under the term "cumulative causation" models. Perhaps the best known of these, and the most significant in relation to this study, is the Myrdal model. Framed explicitly for countries with a low level of economic development, the Myrdal model predicts regional per capita divergence for the income variable as modernization and development proceed.

Myrdal observes that, under prevailing world economic conditions, the indices of economic development rise in the highly developed countries and these industrialized countries become even more industrialized. In the less developed countries, he says, the results are not necessarily beneficial. "In the underdeveloped countries, on the other hand, where incomes are so very much lower, capital formation and investment tend generally to be smaller, even relative to their lower income... Many of these countries have during recent decades even moved backward in average income."[21]

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[21]Myrdal, Rich Lands and Poor, p. 5.

Myrdal rejects the view of some development economists that in a free economy the social process follows a direction toward a position or state of equilibrium between regional forces.

> Behind this [equilibrium] idea is another and still more basic assumption, namely, that a change will regularly call forth a reaction in the system in the form of changes which on the whole go in the contrary direction to the first change... The idea I want to expound in this book is that, on the contrary, in the normal case there is no such tendency toward automatic self-stabilization in the social system. The system is by itself not moving toward any sort of balance between forces but is constantly on the move away from such a situation.[22]

Myrdal holds that, in most cases, a change does not result in counterbalancing changes but, instead, leads to other changes that move a system in the same direction as the initial change and perhaps much further. Because of this circular causation, the social process tends to become cumulative and often gathers speed at an increasing rate. "The play of the forces in the market normally tends to increase, rather than to decrease, the inequalities between regions."[23] Elaborating slightly on the same concept, Myrdal asserts: "So that once certain areas have by some initial advantage gone ahead of the other, additional activity or growth will tend to be concentrated in the

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[22] Ibid., p. 12.

[23] Ibid., p. 26.

already expanding regions because of their advantages rather than in the remaining areas of the country."[24] Figure 2 shows a flow diagram that illustrates this cumulative process.

A closely related corollary of the Myrdal model is the spatial interaction between growing and stagnating regions which he describes in terms of "backwash" effects and "spread" effects. The effects of backwash, or polarization, at the initial development area(s), are unfavorable to the peripheral less developed areas. There the economic deterioration is caused by the greater opportunities which exist in the active growth pole or poles. "Backwash effects are therefore counterdevelopment tendencies to the nongrowth poles which through the loss of youth, talent, and wealth experience an increasing discrepancy in wealth when contrasted to the growing regions."[25]

Along with the loss of productive talent from the outlying areas, the superior competitive position of goods and services from the expanding regions brings a negative influence on any local industries or specialized commercial

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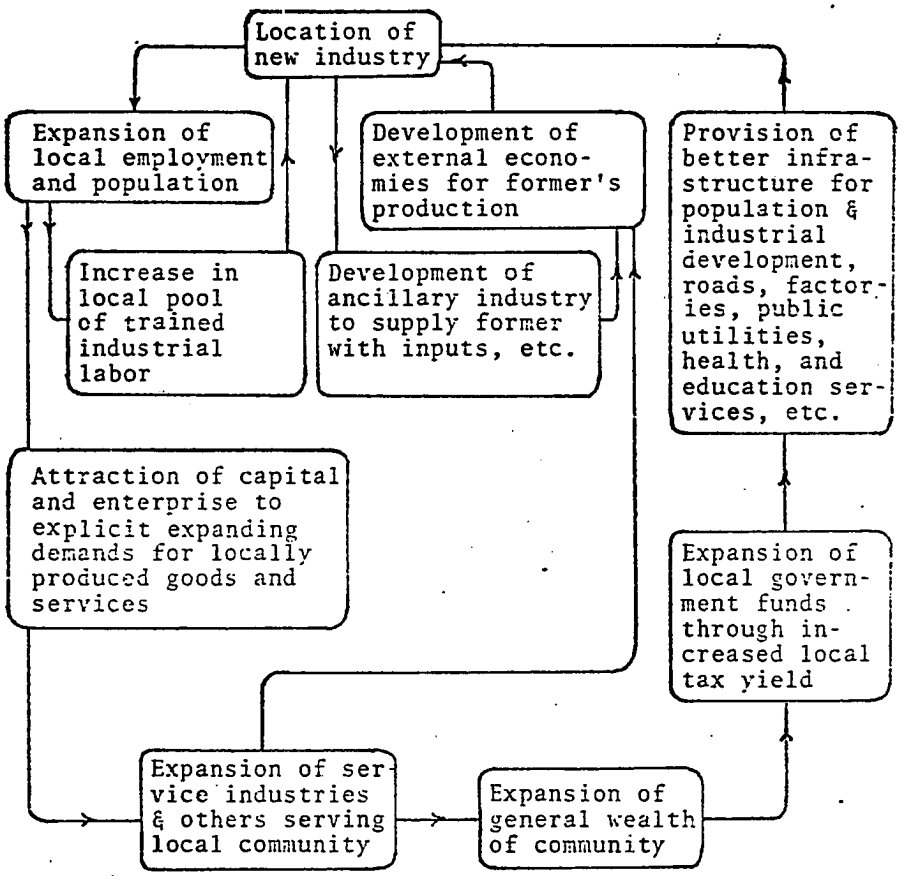
[24]Ibid., p. 15.

[25]Herbert C. Weinand, "Some Spatial Aspects of Economic Development in Nigeria," Journal of Developing Areas, p. 248.

Figure 2. The Myrdal Model of the cumulative causation process.



SOURCE: Gunnar Myrdal, Rich Lands and Poor (New York: Harper & Row, 1957), p. 54.

activities that might have been there. Further backwash effects appear in non-economic factors such as health and education in the stagnating regions. "In all these ways, backwash effects, particularly those working through spatial interaction, come into operation to frustrate growth in the former (stagnating regions) and sustain it in the latter (expanding regions)."[26] Spread effects might theoretically counter the backwash effects by increasing demand in the growth pole areas, such as for agricultural and mineral products from the adjacent regions, so that expansion in the poles would cause economic expansion elsewhere. This spread or "trickle down" effect might then provide some additional work for the unemployed in the poorer regions. However, Myrdal does not see the spread effects as sufficient to establish an equilibrium.

> In the marginal case the two kinds of effects will balance each other and a region will be "stagnating." But this balance is not a stable equilibrium, for any change in the forces will start a cumulative movement upward or downward.[27]

Myrdal sees the spread effects as being weakest and least responsive in the initial stages of development, bringing a state of unrest that might imply dangerous social and

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[26]D. E. Keeble, "Models of Economic Development," in Socio-Economic Models in Geography, p. 259.

[27]Myrdal, Rich Lands and Poor, p. 32.

political problems for the central authorites.

> The solution, as seen by Myrdal and Hirschman, is through government action in the form of redistribution of wealth through public investment. The provision of better schools, roads, hospitals, and other amenities by the government is economically the least harmful means by which some of the regional inequalities may be alleviated.[28]

Consistent with this approach are the "planned poles," or consciously dispersed centers of growth which result from state intervention in the economic mechanism.[29]

While the foregoing summary review of various models of social and economic development is relevant as background for the present study, the purpose of this dissertation is not to develop a new and better regional growth model. Rather, the study proposes to examine the modern economic and social growth in Saudi Arabia in terms of the most realistic and applicable available model. For this purpose, the Myrdal model has been selected for a number of reasons: (1) Myrdal's model is explicitly formulated in relation to the developing nations; (2) Myrdal's use of terms such as backwash and spread effect--parallel to the widely employed

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[28] Weinand, "Some Spatial Aspects of Economic Development in Nigeria," Journal of Developing Areas, p. 249.

[29] R. Keith Semple, Howard L. Gauthier, and Carl E. Youngman, "Growth Poles in Sao Paulo, Brazil," Annals of the Association of American Geographers, Vol. 62 (December, 1972), pp. 591-98.

concepts of growth poles and "trickle down" consequences--within a context of cumulative causation seems especially relevant to the actual Saudi Arabian situation, and therefore appropriate to use in analyzing that nation's economy; (3) Myrdal senses the importance of non-economic and social factors in the process of regional development; (4) Myrdal's model introduces space and distance into the analysis; and finally, (5) Myrdal recommends government intervention as a means of counteracting regional divergence, an approach consistent with the actions of the Saudi Arabian government.

Myrdal's development model makes a prediction of regional divergence, a concept the present study is designed to test. In Chapter VI, the Myrdal model will be tested in the case of Saudi Arabia with respect to twelve selected economic and social variables. In studying the national and regional development of his home country, the writer will first of all describe the aggregate patterns of spatial inequality within the national borders, while identifying the overall and regional growth achievements, and concern himself only secondarily with the disaggregation process and the identification of causation. As a technique of identifying and quantifying spatial differences, Williamson's index of regional inequality will be employed.

Chapter III

THE SAUDI ARABIAN CASE: A GENERAL DESCRIPTION

Physical Environment

The Kingdom of Saudi Arabia occupies approximately four-fifths of the Arabian Peninsula and is about three times the size of Texas. Over ninety percent of it is desert, and even the highlands in the southwestern part of the peninsula, where the climate is considered semiarid, are afflicted with frequent shortages of water. The average annual rainfall nearly everywhere is less than ten inches--and most of the interior has less than five inches. Summer temperatures are among the highest in the world, with July and August means near 90° F. on the Red Sea coast, and even higher means at interior locations where the air is even drier. Afternoon temperatures often exceed 110° F., but the wide diurnal variations bring a pleasant cooling effect at night. Frosts occur on the highlands and in the northern part of the peninsula in winter, where Mediterranean influences may bring light showers or even snow.[1]

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[1]W. G. Kendrew, The Climates of the Continents, 5th ed., (Oxford: Clarendon Press, 1961), pp. 246-53.

Physiographically, Arabia can be thought of as a sloping tableland with a high edge along or near the Red Sea and a gradual descent toward the Persian Gulf. There are no perennial rivers, and the numerous wadis, some of them canyon-like in character, may be occupied by water only once every several years following an unexpected heavy shower. Sparse and intermittent growth of grass has permitted nomadic herding over sizable areas of the peninsula, but oases where some surface irrigation is possible and water can be stored in cisterns or deep wells are few in number and widely scattered (Figure 3). In such relatively favored spots, there is a little cultivation with stock rearing on the drier outskirts of the settlements.[2]

Historical Background

Historically, the Arabian peninsula has been traversed by nomadic Bedouins and their herds of camels, sheep, and goats. Even where springs or wells provided some opportunity for sedentary farming, there has been little hope for more than a bare sustenance. The constant search for fuel, found in the woody stems and roots of occasional hardy bushes, helped keep the herding population nomadic.

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[2]W. B. Fisher, The Middle East: A Physical, Social and Regional Geography (London: Methuen and Company, Inc., 1951), p. 453.

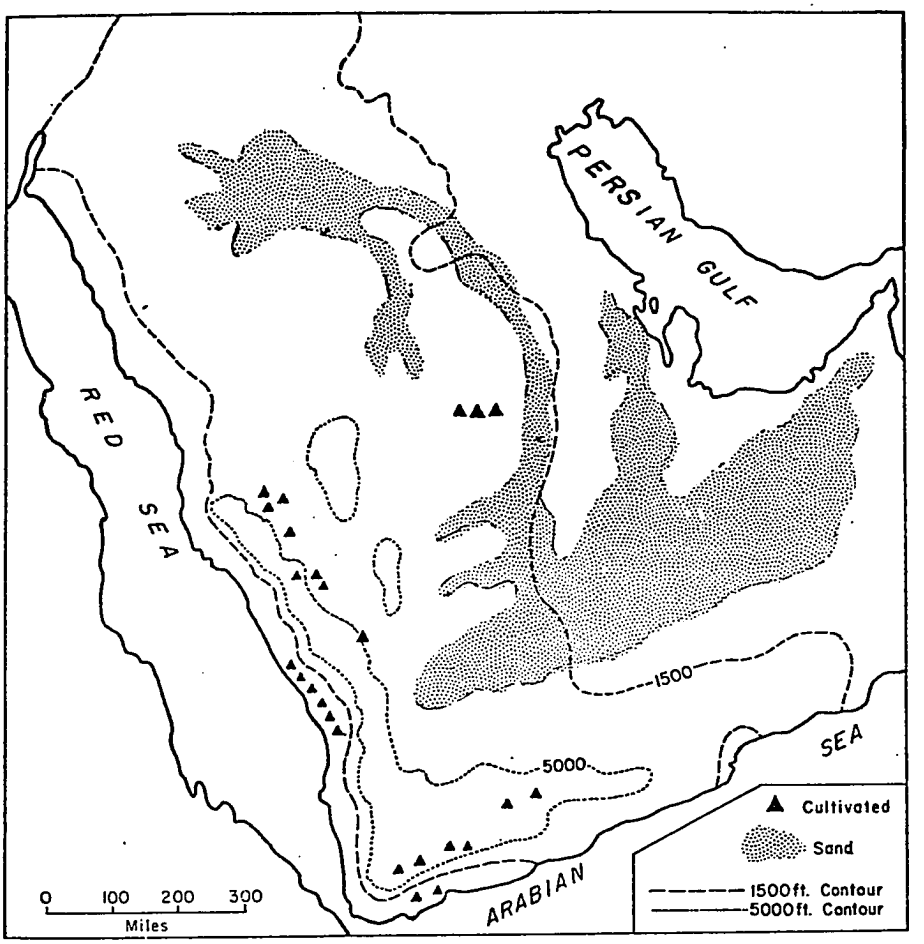

FIGURE 3. ARABIA-PHYSICAL FEATURES

The wadi network determined where minor centers of commerce might be located, and where commercial routes along market trails might be established. In later times, the Bedouins came to rely somewhat more on agriculture, with the development of some surplus-producing settlements based on reservoirs or deep wells. Scattered trading towns developed along the coast, the largest of them Jeddah on the Red Sea.

After centuries of Turkish rule in the Arabian peninsula, brought to an end with some British military assistance during World War I, the Kingdom of Saudi Arabia was created through the efforts of the Wahhabi chief, Abdul-Aziz. The kingdom thus created in 1932 began as a paternalistic, highly conservative one, organized under traditional Muslim social rules and practices. Within a few years, rich oil deposits became its chief source of revenue, and these have been the agent of rapid transformation and modernization. Foreign exploitation of Saudi Arabia's oil, gas, and other mineral resources has stimulated and made possible a particularly rapid modernization. In 1938, an American company, Standard Oil of California, began producing oil in Saudi Arabia under a concession granted some five years earlier. Within a few years, Standard Oil of California was joined by the Texas Company (now Texaco), Standard Oil of New Jersey (now EXXON), and the Socony Mobil (now Mobil)

Company, and the combined group took the name Arabian-American Oil Company, or Aramco.[3] The Getty Oil Company secured a concession to develop the oil resources of the Neutral Zone, shared by Saudi Arabia and Kuwait. The exploitation of the nation's oil resources by American and, later, European and Japanese companies has raised Saudi Arabia within a single generation from a have-not to a have country. The new income sources, and the influx of skilled administrators and technical workers connected with the oil industry, have been influential in facilitating new directions of government policy while modifying many social, cultural, and economic patterns.

National revenue derived from oil has sparked numerous economic, social, political, and cultural changes during recent decades. The striking increase in available capital from the mushrooming petroleum industry has created jobs for thousands of local workers and stimulated the immigration of American and European personnel with western spending habits and different cultural practices. At a time when some Third World countries are beginning to evolve from an underdeveloped status to an emerging status, and

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[3]Stephen Longrigg, Oil in the Middle East: Its Discovery and Development, 2d ed. (London: Oxford University Press, 1961), pp. 108-110.

many more would like to, an understanding of the modernization process as exemplified in Saudi Arabia becomes increasingly significant.

The government of Saudi Arabia continues to be patriarchal in nature, and its organization and operations are very different from the Western democratic pattern. A nearly absolute ruler, King Khalid, son of Abdul-Aziz, is assisted by an appointed Council of Ministers which carefully observes the laws of Islam. In contrast to the practice in most existing monarchies, the King serves as his own prime minister and is much involved in the day-to-day workings of the system.

Saudi Arabia is presently divided into five administrative regions: Hejaz, Nejd, Al-Hasa, Asir, and the North, the last of these created from part of the former Nejd (see Figure 4). These five administrative provinces or regions differ greatly from one another in size and character. Most of the important revenue generating activity takes place in the oil-producing Eastern Region (Al-Hasa), and within that area most of the activity is centered around the settlements of Damman, Dhahran, and Ras Tanura. Next in importance among the administrative areas is the Western Region (Hejaz), which includes the holy cities of Mecca and Medina, and the port city of Jeddah. The remaining three regions are rather

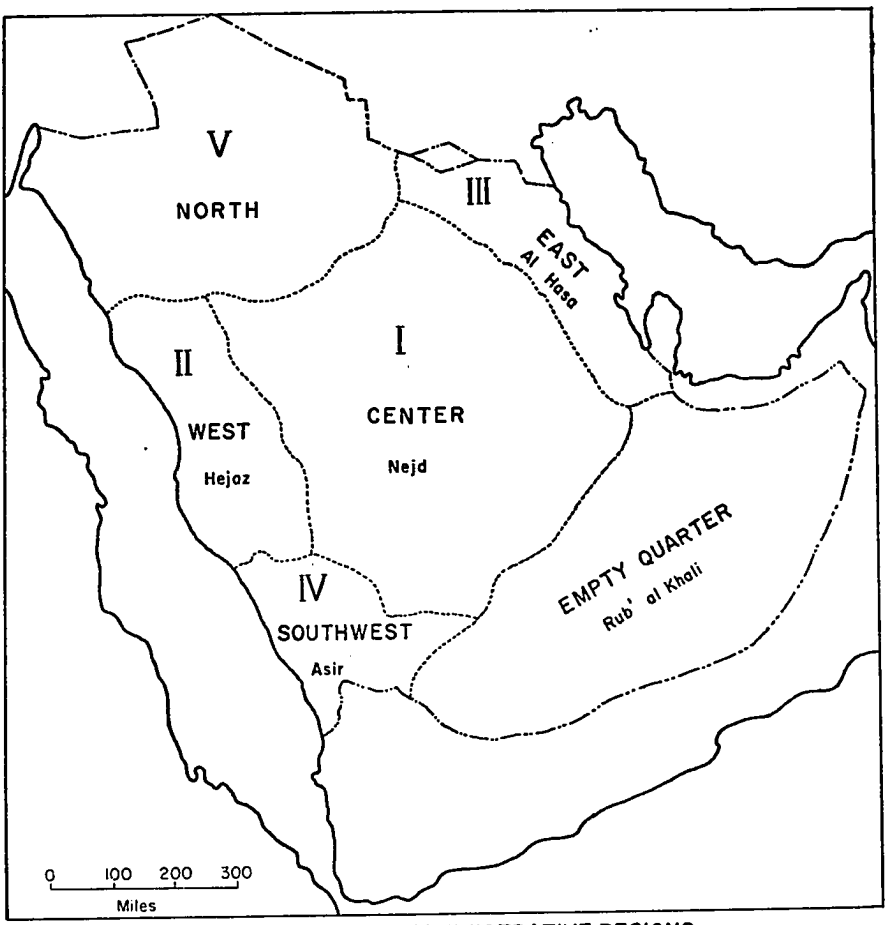

FIGURE 4. SAUDI ARABIA—ADMINISTRATIVE REGIONS

underdeveloped relative to the Eastern and Western regions.[4]

The Central Region (Nejd) which includes Riyadh, the national capital, is the seat of the royal family's power and the center of the Wahhabi influence. The presence of the leaders of the Wahhabi sect largely accounts for the region's strong religious conservatism. The West and East are much more liberal, particularly in regard to dress and other social practices, a fact which it is helpful to keep in mind whenever considering the current and future prospects of the Kingdom's economic and social development.

Approximately 20 percent of the estimated seven million population still consists of Bedouin migrants who live in tents, and move from place to place with their flocks. The remainder of the people are farmers, landlords, craftsmen, shopkeepers, and government or private employees and workers. Living conditions in many parts of the country continue to be depressed and unsanitary, by Western standards, but the Ministry of Health, created in 1951, has made considerable progress in reducing this problem. While the illiteracy rate is still high, perhaps as high as 75 percent, elementary education is now free to all Saudis, and the

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[4]Ramon Knauerbase, "Saudi Arabia's Economy at the Beginning of the 1970's," Middle East Journal, Vol. 28 (Spring, 1974), p. 127.

country has many anti-illiteracy centers. Altogether, there are in the country scores of new educational institutions, including two universities and a technical institute. A national airline well served by regional airports, many miles of new motor roads, and several modernized cities now characterize the new Saudi Arabia.

Growth and Development

The present Saudi Arabian economy can be characterized briefly. While most of the population, and hence the labor resources, are still in the agricultural sector, nearly all the development revenue is derived from oil and gas exports. The economy is developing under a system of national law which permits substantial participation by the private sector, especially in industry, internal commerce, and housing, but is subject to strong control by the various government ministries.

The teachings and social traditions of Islam have brought to fruition in Saudi Arabia a society which tends to oppose communism--one in which there is considerable protection of and encouragement for private ownership.[5] At

[5]Abdulhady Taher, "The Industrial Development of Saudi Arabia," address to the American-Arab Association for Commerce and Industry, Hotel Plaza, New York, April 30, 1968.

the same time, while acutely aware of their nation's enviable financial position vis-a-vis most of the other underdeveloped nations, the planners of the Saudi Arabian future have recognized the necessity of providing the national economy with more diversified sources of revenue and export potential. They know very well that petroleum is an exhaustible resource, and that provision must be made for a time when other domestic resources and foreign investments will be the mainstay of the national economy.[6]

The tremendous economic growth of the past decade has resulted in an awesome increase in the requirements for skilled manpower at all levels of the society. Thousands of young Saudi Arabians have been sent on government scholarships to the United States and other Western countries for specialized education and training. The demand for more specialized skills has been met in part by government-sponsored training programs within the country. The Saudi government also employs large numbers of foreign personnel, including a great number of laborers from Yemen and other nearby Arab states. Such a large-scale use of foreigners, however, is considered a short-term necessity, and the

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[6]Kingdom of Saudi Arabia, Ministry of Information, Prince Faisal Speaks, December 1, 1963, p. 40.

Saudi leadership is determined to create the educational facilities necessary to produce indigenous expertise in the many technical and other skills required for the operation of a modern economy.

Diversifying the economy in such a harsh physical environment is no easy task. Water is perhaps the greatest and most urgent problem in the Kingdom of Saudi Arabia. Because of light precipitation, as already mentioned, the nation has no flowing rivers. As a result, agriculture has been restricted mainly to the highlands of the Asir Region and to small oases on the Nejd plateau and in the Eastern Region. Even within these oases, the high temperatures and cloudless skies lead to very high evapotranspiration rates, and the dust, sandstorms, and buildup of salt in irrigated areas where drainage is not sufficient make agriculture difficult at best. As an official government statement expressed it, "The scarcity of water weakens the link between man and the land and even affects the relationship between man and his neighbor; furthermore, it causes an erosion of stability and social ties."[7]

The harsh climate clearly operates as a constraint on efforts to diversify production. Entrepreneurial and

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[7]Kingdom of Saudi Arabia, Ministry of Information, The Great Water Projects (N.p., February, 1971), p. 5.

labor skills needed for modern enterprise are in extremely short supply because of the limited range of past economic activities. Thus, the government is virtually forced in the position of being the mainspring of economic change. Through its policies and programs, the Saudi government is trying consciously to create an internal environment conducive to individual enterprise and to foster more diversified income sources. At the same time, along with some of its wealthier citizens, it is investing heavily in income-producing activities outside the country.[8]

The internal development plan for Saudi Arabia, discussed in more detail in Chapter IV, emphasizes five major areas of importance: (1) transportation and communications; (2) education, health, and housing; (3) agriculture and water resources; (4) petroleum and other mineral resources; and (5) commerce and industry. The problems and varying rates of progress in each of these five areas illustrate the complexity and range of the Saudi Arabian government's intentions in the area of development. The present chapter presents some background and general observations on each of these areas, particularly for the

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[8]J. E. Akins, "Saudi Arabia: Oil and Other Policies," Oil and Gas Journal, July 19, 1976, p. 110.

period prior to 1964. A detailed graphical and statistical portrayal of later progress, emphasizing the ten-year period 1964-1973, is the subject of Chapter V.

Transportation and Communications

The functional economy of Saudi Arabia involves several more or less developed but still isolated economic regions, once connected only by camel caravan trails but now tenuously linked by air routes and some improved, hard-surfaced roads. The main population centers are separated by vast deserts, marked by rolling plateau country, mountains, wadis, and, in places, moving sand dunes. Fast and reliable means of transportation and communications have been deemed essential. Modern telegraph and telephone facilities were slow to develop on the Arabian peninsula, but these plus radio-telephone, radio, and television services are now available to most areas. The development of a modern road network can reduce the cost of overland transportation and help to integrate the various regions within the overall national economy. It contributes to the development process by aiding in the expansion of agriculture, mining, industry, and commerce. The enhancement of property

values is an obvious consequence of improved communication and transport networks.[9]

While there was a slight beginning of modern road construction before World War II, the year 1950 really marks the beginning of the modern road system in Saudi Arabia. Figure 5 shows the major roads constructed during the period 1950-51 to 1964-65. Some of the roads constructed early in that period were of relatively short length, from 12 to 40 kilometers, and are not shown on the map. The first major road extension occurred in 1952 when the two-lane, asphalt surface Jeddah-Medina road was begun. It was completed in 1955 with a length of 424 kilometers. Although the primary purpose of that road was to accommodate pilgrims traveling to Medina (where the prophet Mohammed is buried), it was also designed to serve as part of an eventual link between an east-west Riyadh-Jeddah road and Tabuk, an important military base protecting the northwestern frontier of Saudi Arabia. The extension from Medina to Tabuk was begun in 1957 and completed in 1964, adding 674 kilometers to the growing national network. In the same general period, a third major road in the central part of the country

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[9]Kingdom of Saudi Arabia, Ministry of Communications, Roads and Ports in Saudi Arabia (Riyadh, 1971).

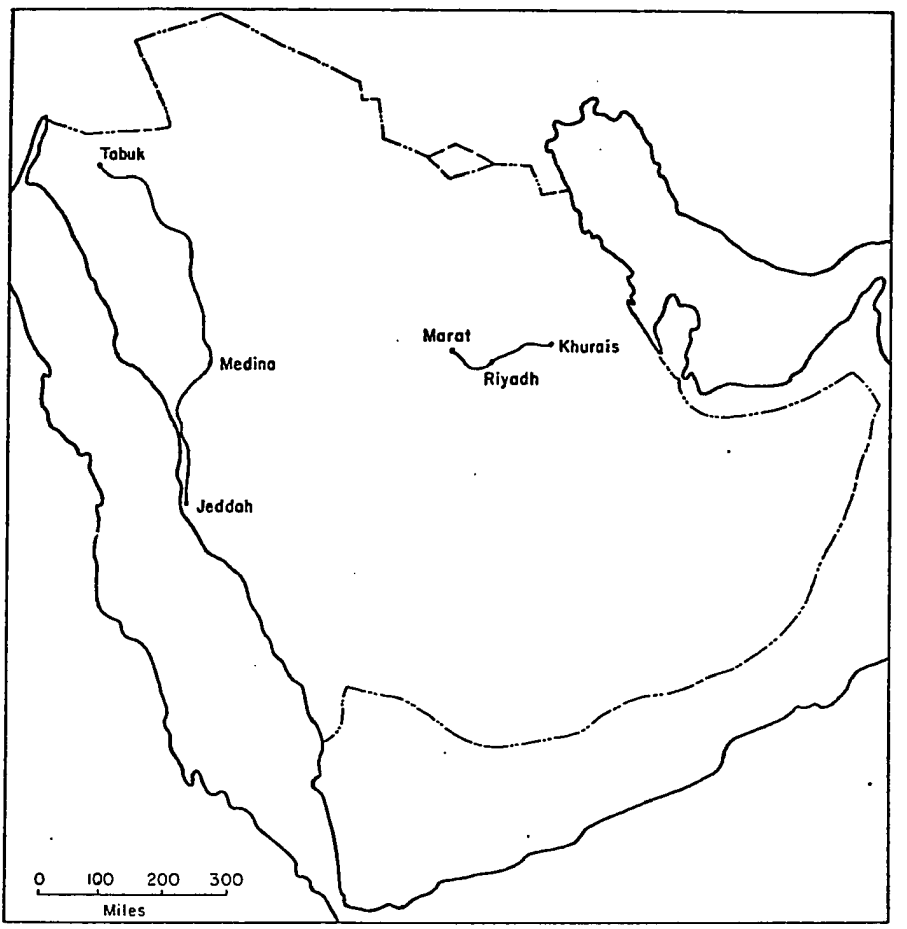

FIGURE 5. SAUDI ARABIA–MAJOR ROADS BUILT, 1950-1960

was undertaken, to connect Riyadh with Khurais on the western margin of the oil-rich area inland from the Persian Gulf. This 159 kilometer road was completed in 1961. A fourth major road, 170 kilometers in length, was completed in 1961 connecting Riyadh with Marrat. Its major purpose was to help give the northern interior of Nejd better access to Riyadh, now the chosen capital of Saudi Arabia.

Education, Health, and Housing

Before the First World War, while still partly under Turkish administration, the area which is now Saudi Arabia was divided into small, independent units, each governed by a local mayor and subject only to his dictates. No national or regional effort was apparent to promote education. Only kottops (independent teachers) and mosques offered any formal education, with private classes available to only a few children. The purpose of these limited educational endeavors was to instruct children in how to read the Koran, Islam's holy book, and to teach religious ethics and behavior.

In 1903, two regular elementary schools for boys were opened under Turkish government auspices, one in Jeddah and one in Mecca. These were followed shortly thereafter by a few other similar schools scattered over the country.

Only after national unification in 1933, however, did even elementary education become generally available.[10]

A few years earlier, in 1925, the Saudi family, which then controlled only the Central Region, established a General Directorate for Education, and following unification opened new elementary schools in other parts of the peninsula. Within the Saudi-administered area, the number of elementary schools grew from less than 10 in 1926 to more than 200 in 1950. Figure 6 shows the location of elementary school sites in 1926 and in 1938.

Urban elementary schools offered a somewhat more extensive curriculum which prepared the children for further education, while the goal of rural elementary schools was simply to teach religion and reduce illiteracy by stressing basic reading, writing, and rudimentary arithmetic. The overall goals of Saudi Arabia's elementary school system were intended to be consistent with the framework of the nation's religious and social values.

In 1953, the central government established a full-fledged Ministry of Education to develop a plan for secondary, industrial, and teacher-training facilities. The following year it abolished the dual system of rural and

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[10] A. A. Abdd-Wassie, Education in Saudi Arabia (London: Macmillan, 1970), p. 25.

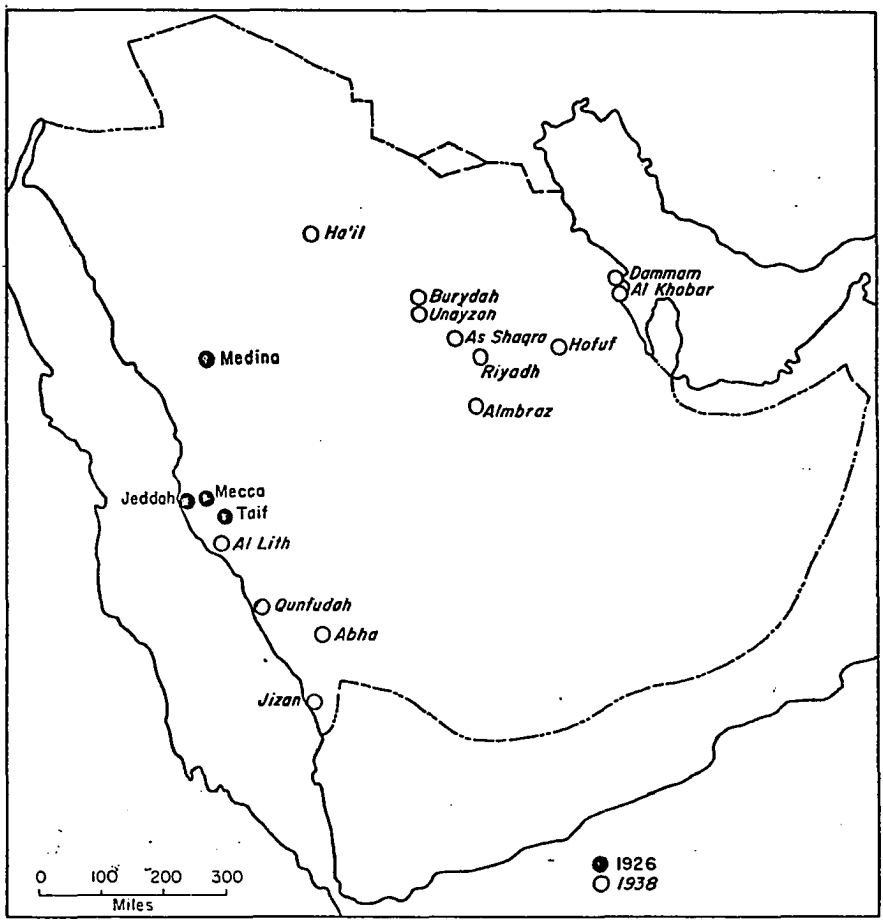

FIGURE 6. SAUDI ARABIA—LOCATIONS OF ELEMENTARY SCHOOLS, 1926 AND 1938.

urban education and brought all elementary schools under one system. The new Ministry classified schools into the three types familiar in American education--elementary, junior high, and secondary. Primary attention, however, was given to the elementary schools, considered basic for the new generation.

In that same ten-year period, the number of elementary teachers rose from less than 1,500 in 1953 to over 6,500 by 1963, and the number of students went from some 40,000 to about 200,000. From 1953 to 1963, the total number of schools increased from less than 200 to almost 1,000. Formal education for girls did not become available until 1960, although a separate General Directorate of Education for Girls now provides elementary, secondary, and higher schools for female students.

Until the late 1950's, no comprehensive university existed in Saudi Arabia, despite the earlier creation of some independent colleges offering post-secondary instruction. In 1957, Riyadh University was founded, with an initial enrollment of 21 students. By the mid-1960's, it was clearly the foremost facility for higher education in the center of the Arabian peninsula, and had an enrollment of more than 1,000. The marked expansion of educational facilities and services at all levels in later years, including the

establishment of several new universities, will be described in Chapter V.

At the time of national unification in the 1930's, health facilities in Saudi Arabia were limited and finances to support them were almost non-existent. The facilities which did exist were primitive and largely concentrated in the Western district (Hejaz). As of 1933, there appears to have been only one dentist and one pharmacist in Mecca, one dispensary with an assistant pharmacist in Taif, and one pharmacist and an assistant pharmacist in Medina.[11] By 1945 there had been some improvement, but there still remained a great need for expanded medical facilities and professional health personnel. A Ministry of Health was established in 1955, and by 1964 it was administering a rapidly increasing budget for health purposes. Details are presented in Chapter V.

As late as the 1960's, not much had been done by the government in the field of housing. Since then the administration has developed model housing projects for low-income people in Riyadh, Mecca, and Jeddah. Similar projects are

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[11]Kingdom of Saudi Arabia, Royal Palace. Unpublished letter in Arabic from King Abdul-Aziz to the Director of Health approving the health budget for the year 1933.

being pushed for the east coast area and other communities in the country. Since the housing industry in Saudi Arabia is largely confined to the private sector of the economy, it is not examined in Chapter V, although a remarkable amount of activity is underway in an effort to ameliorate a severe housing shortage.

Urban Growth and Population Trends

Research on Saudi Arabia has been handicapped in the past--and to some extent is still handicapped--by a lack of reliable data on population numbers and characteristics.

Taking a census in Saudi Arabia is no easy task in view of the nomadic nature of much of the population and the shortage of appropriately trained personnel in the central government. Because of uncertainties regarding the accuracy of published population figures, the data used in this study are in part estimates or educated guesses. However, the past few decades have witnessed substantial improvement in census taking procedures so that available figures have become increasingly accurate as we approach the present.

The available population figures for each of the five regions of Saudi Arabia considered in this study suggest a steadily increasing population since the time of national

unification. The 1933 estimated population of 5,100,000 was considered to be approximately half Bedouin and half urban, that is, living in established settlements. Figure 7 shows the region-by-region distribution. Region I (Central) had a population of 2,100,000; Region II (Southwest) 1,100,000; Region III (East) 300,000; Region IV (West) 1,200,000; and Region V (North) 400,000. While the proportion of Bedouins in the population has been falling steadily, it is still a significant proportion of the total.

Over the past forty years there has been considerable urban growth in Saudi Arabia. In 1933, Mecca was the only city with a population of more than 100,000. By 1974, Mecca had more than 500,000, as did both Riyadh and Jeddah. Figure 7 shows ten cities of over 50,000 people in 1974 and six additional ones with a population of more than 30,000 (Table 2). The rural-urban shift has clearly accelerated in recent years.

The urban population in the larger towns is engaged mostly in bazaar operations or other commercial activity. Some are engaged in such industrial pursuits as metal working, tile making, cement production, and general construction. A growing fraction of the urban population consists of salaried employees of the government. The dispersal of the population, now considered to be about

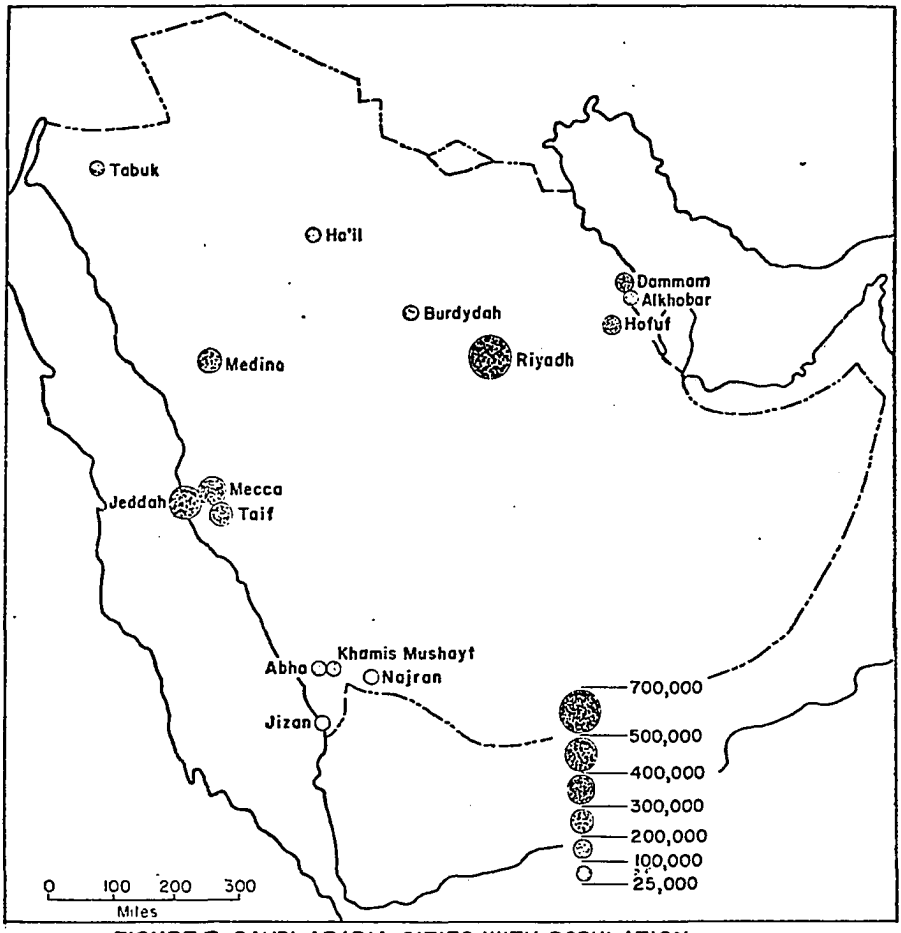

FIGURE 7. SAUDI ARABIA–CITIES WITH POPULATION OVER 30,000, 1974.

TABLE 2

MAJOR CITIES IN SAUDI ARABIA WHICH HAVE A POPULATION OF MORE THAN 30,000 ARRANGED BY THEIR SIZE

1974

Number of Population	Number of Families	City
666,840	101,506	Riyadh
561,104	97,363	Jeddah
366,801	67,947	Mecca
204,857	30,877	Taif
198,186	35,390	Medina
127,844	21,513	Dammam
101,271	14,551	Hafuf
74,825	10,696	Tabuk
69,940	8,774	Burdydah
54,325	7,775	Almbraz
49,581	8,142	Khumis Mushayt
48,817	9,023	Alkhobar
47,501	9,149	Najeran
40,502	6,065	Ha'il
32,812	5,648	Jizan
30,150	5,413	Abha

SOURCE: Official population census of 1974.

seven million, over such a vast area contributes to a lack of unity and increases the difficulty and expense of coordinated development planning.

Agriculture and the Great Water Projects

In a land that is nearly all desert, the food supply has traditionally been precarious. Milk and a little meat from the flocks, and dates from the scattered oases, supplemented by occasional supplies of cereal grains and fruits, locally grown or imported, comprise the traditional diet. In later years, the larger cities have received a substantial flow of food supplies from foreign sources. Agriculture and related activities, which still employed over one-half of the population in 1970, yielded only six percent of the gross national product. In an effort to increase and diversify the production of foodstuffs, and thereby provide more productive employment and better nutrition for the citizenry, the Saudi government in recent years has made substantial budget allocations for promoting efforts in agricultural research and development.

Of Saudi Arabia's total area of 556.8 million acres, less than a million acres, or about 0.2 percent, is under

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Norman C. Walpole et al. Area Handbook for Saudi Arabia (Washington, D. C., The American University), 1971.

cultivation. Some 230 million acres have been mapped as low-grade grazing land, while about four million acres of woody vegetation in the Southwest region is indicated as forest land. The remainder of the land surface is non-agricultural wasteland. With the help of new water development projects, the acreage of arable land is gradually increasing.[12] The agricultural produce is confined mainly to dates, with some wheat, barley, rice, vegetables, and fruits.

A government land distribution policy has been formulated to encourage rural people in the private sector of the economy to acquire their own lands and farm them with the help of government subsidies for the purchase of machinery, fertilizer, seed, and other farming necessities. The largest such development is in the Central Region. Toward this end, the development of agricultural cooperative societies began about 1960. A vigorous effort is being made to educate the farmers of the nation in the use of new techniques that could drastically increase agricultural yields.

Further modernization of the agricultural sector of the economy seems imperative. While perhaps as much as

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[12]International Association of Agricultural Economists, World Atlas of Agriculture, Novara, Italy: Istituto Geografico De Agostini, 1969, p. 75.

60 percent of the Saudi Arabian population is engaged in subsistence agriculture or nomadic pastoralism, over half of the country's food must nevertheless be imported. "Few farmers appreciate the benefits derived from proper use of fertilizer and fewer yet are knowledgeable of proper irrigation and drainage procedures, despite the training programs undertaken by the government."[13]

Extensive geological surveys are under way, with at least occasional success, in an effort to find potable underground water sources beneath the desert floor. For some fortunate localities, the tapping of virgin water deposits is turning arid lands into fertile fields. Urban water supply has always been a critical problem in Saudi Arabia. The government already has three water desalinization plants in operation (Dammam-Al Khobar-Dhahran, Jeddah, and a smaller settlement farther north on the Red Sea coast) and is presently completing two more. A huge water purification and treatment plant has been established in Riyadh to improve the quality of the local, low-grade ground water.

Petroleum and Other Mineral Resources

Saudi Arabia still has large reserves of petroleum

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[13]W. W. Feifert, Mohammed A. Baker, and M. Ali Kettani, Energy and Development: A Case Study (Cambridge, Mass.: MIT Press, 1973), p. 53.

and natural gas. Although oil was discovered more than forty years ago, the great impact of the oil industry did not begin to be felt by the population until the years just after World War II when production and the government's income both started soaring. These were the last years of the long reign of Abdul Aziz who, after his death in 1953, was succeeded by his son, Ibn Saud. In the economic domain, the enlarging income from the oil industry made it possible to set in motion government plans for development, particularly in the areas of irrigation and education.[14]

Annual government allocations in Saudi riyals amounted to about 214 million just before 1950, but these had jumped to 5,354 million by 1967.[15] The greatest increases in government expenditures in the 1950-1967 period were in national security (from 80 million riyals to 1,688 million), education (from 7 million to 405 million), communications (from 4 million to 150 million), health (from 5 million to 133 million), and agriculture (from 6 million to 88 million).

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[14]P. Balata, "Saudi Arabia: From the Tribe to the State," Defense Nationale, Vol. 9 (May, 1973), pp. 77-88.

[15]Lipsky, Saudi Arabia, pp. 318-19. Data for 1967 from Saudi government statistics.

As the major recipient of the expanding oil revenues, the Saudi government is in a position to influence profoundly the rate and pattern of economic development. The way in which the government allocates its expenditures plays a large part in the determination of the distribution of national income and resource allocation. The composition of imports, consumption, and even investment is conditioned largely by the pattern of government spending. Currently, government spending constitutes a major portion of the total national income.

Foreign observers have been immensely impressed by the oil wealth accumulating in certain Middle East areas.

> Saudi Arabia is unlikely to be able to spend more than $9 billion of the nearly $30 billion it receives this year (1974) in oil revenues.[16]

A big slice of the spending will go on subsidies of basic commodities--intended to be the beginning of a rapidly expanding social welfare scheme.[17] Table 3 shows oil revenues and crude oil production for the years 1962-1972.

Saudi Arabian leaders know perfectly well that

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[16] "Saudi Arabia," Christian Science Monitor, March 22, 1976, p. B10.

[17] "Saudi Arabia Works Out How to Spend It All," Economist, November 30, 1974, p. 93.

TABLE 3

OIL REVENUES AND CRUDE OIL PRODUCTION, 1938-1972

	Aramco		Other Companies		Total	
Year	Million U.S. Dollars	Million U.S. Barrels	Million U.S. Dollars	Million U.S. Barrels	Million U.S. Dollars	Million U.S. Barrels
1938	3.2	0.5			3.2	
1946	10.4	59.9			10.4	
1955	394.9	352.2	2.6	4.4	397.0	356.6
1956		360.9		5.8		366.7
1957		362.1		11.6		373.7
1958		370.5		14.7		385.2
1959		399.8		21.2		421.0
1960	312.8	456.4	20.9	24.9	333.7	481.3
1961	352.2	508.3	25.4	32.4	377.6	540.7
1962	381.7	555.1	28.0	44.6	409.7	599.7
1963	57.1*	594.6	36.6	57.3	607.7	651.9
1964	482.1	628.1	41.1	66.2	523.2	694.3
1965	618.4*	739.1	44.2	66.1	662.6	805.2
1966	745.5*	873.3	44.2	77.2	789.7	950.0
1967	859.4*	948.1	49.7	75.7	909.1	1,023.8
1968	872.0	1,039.8	54.8	73.9	926.8	1,113.7
1969	895.2	1,092.3	53.8	134.1	949.0	1,173.9
1970	1,088.4	1,295.3	65.6	91.0	1,154.0	1,386.3
1971	1,866.4	1,641.6	78.5	99.2	1,944.9	1,740.8
1972	2,677.9**	2,098.5	101.4	103.3	2,779.3	2,201.8

TABLE 3
(Continued)

Year	Aramco		Other Companies		Total	
	Million U.S. Dollars	Million U.S. Barrels	Million U.S. Dollars	Million U.S. Barrels	Million U.S. Dollars	Million U.S. Barrels
1973	4,195.0	2,677.1	145.1	95.4	4,340.0	2,772.6
1974	22,375.0	2,996.5	198.5	98.5	22,573.5	3,095.1
1975	24,838.6	2,491.8	837.6	90.7	25,676.2	2,582.5

SOURCES: Ramon Knauerbase, "Saudi Arabia's Economy at the Beginning of the 1970's," Middle East Journal, Vol. 28 (Spring, 1974), p. 131, with data for 1938-72 from various Saudi Arabian government publications. Figures for 1973-75 from Saudi Arabian Monetary Agency, Statistical Summary, 1975-76, pp. 72-73.

oil as the base for a national economy is little more than shifting sand. Oil and gas are exhaustible natural resources. At best, the country has reserves that will last 70-100 years at the present rate of use. Even though new reserves may be discovered, the oil-based prosperity is temporary. Because Saudi Arabia has no other major mineral resources, alternative sources of prosperity must be discovered if economic gains are to be maintained or extended.[18]

Industry

Modern manufacturing has been slow to develop in Saudi Arabia, and as late as 1971 there were only 283 industrial establishments in the whole country, employing approximately 10,000 persons.[19] These were largely small-scale enterprises catering to domestic needs in such areas as tile-making, furniture-making, printing and publishing, the fabrication of metal goods, and the preparation of

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[18]David G. Edens and William P. Snavely, "Planning for Economic Development in Saudi Arabia," Middle East Journal, Vol. 24 (Winter, 1970), p. 20.

[19]Kingdom of Saudi Arabia, Industrial Finance in the Private Sector in Saudi Arabia (Riyadh: Industrial Studies and Development Center, 1973), p. 22.

food and soft drinks. In recent years, construction has been the most important industry after oil in terms of output.

The development of industry has so far emphasized the processing of the country's own raw materials into industrial products, but it is possible that in the future the processing of imported raw materials and semi-manufactures may become much more important. Because the development of industry is directly related to certain basic social problems, such as the reduction of nomadism and the provision of housing and social services, government planners are beginning to study controlling the migration of farmers and Bedouins, and are getting more involved with employment, labor regulations, and the establishment of new industrial centers.

Nomadism in Saudi Arabia

Since ancient times, the Arabian Peninsula, especially that part which is now Saudi Arabia, has been characterized by nomadism. Traditionally, each nomadic Bedouin group was attached through family ties to a certain tribe which had its own objectives and a social system somewhat different from that of other tribes. Each tribe was conscious of its own independence and unity and relied on its own men for defense and protection. The tribe was patriarchal in its internal organization, headed by one person or a small group of persons who represented the supreme authority.

With the advent of Muslim doctrine, beginning in the seventh century A.D., a greater unity was achieved, with Islam becoming a common link between Arabs and providing a set of goals and precepts under which various tribes could unite and feel a larger sense of loyalty. The life remained nomadic except in a few scattered oases and coastal settlements. With the establishment of the Kingdom of Saudi Arabia in the twentieth century more rapid changes began to take place.

> The tribes were subjected to a central authority and the aspects of their life began to change. Settlement of Bedouins started and civilization invaded their life. Thus the Bedouin started to be looked at as a citizen who has a role in society, in the economy as a whole, and in the supply of labor force.[20]

Saudi Arabian society is relatively homogeneous in that it does not have an elaborate system of strongly pronounced class divisions such as exists in some societies of South Asia. Early Islam, with its doctrine that all the faithful are brothers, did not favor a hierarchy of classes, and in this respect the Islamic faith has continued to exert its influence in Saudi Arabia. In modern times, marked economic disparities have developed between individuals and groups, and some voices have called for a more liberal Western-type approach to these inequities:

> They (the government) should be impartial towards the rich and poor, big and small, weak and strong. The needy and distressed Arabs and Muslims should be the prime concern of the rulers.[21]

The modern-day Bedouin still depends mainly on animal wealth, placing reliance primarily on sheep and

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[20] Nomadism in Saudi Arabia, a report presented by the Saudi Arabian Delegation to the Ninth Conference of Arab Experts in Social Affairs (Jordan, Jerusalem: N.p., 1965), p. 2.

[21] Mohammad Al-Sallah, A King and a Kingdom (Beirut, Lebanon: Rihani Printing and Publishing House, 1968), p. 10.

camel raising. The majority of Saudi Bedouins are camel herders, since camels are the only domesticated animals capable of enduring torrid temperatures and going without water for two weeks or more. The grazing places selected by the nomads change at the whim of the infrequent rains. In the northern regions, where water is somewhat less rare and pastures more abundant, many of the Bedouin groups raise sheep.[22]

To encourage the development of sedentary agriculture, the government Decree of 1960 provided for granting Bedouins specific plots of arable land. Under this Decree, the Ministry of Agriculture was empowered to regulate land acquisition and to supervise reclamation activities.[23]

With the discovery of petroleum, and the sudden increase in public and private funds available for the purpose, the search for potable ground water was intensified. Occasionally, the search was successful, and in certain places crop agriculture could be introduced or expanded. The Bedouins began to move to such places with increasing frequency, especially in drought periods. When the droughts were prolonged, some of the Bedouins decided to stay and

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[22]Fernand J. Touiche, L'Arabie Séoudite (Paris: Presses Universitares de France, 1962), p. 27.

[23]Nomadism in Saudi Arabia, p. 16.

settle around the centers which could provide water. In the course of time, a more settled pattern of life began to attract these nomads. They started to work in the permanent agricultural settlements and established oil communities, where some Bedouins have been promoted to technical positions in the petroleum industry. While an estimated 20 percent of the national population is still nomadic, many Bedouins have migrated to urban and industrial centers in the Eastern and Western regions in order to provide themselves with a better and more secure living.

The traditional Bedouin attitude that physical work is degrading has gradually changed over time. Present government policy seeks to encourage the use of Bedouins as a source of manpower in industry, sedentary agriculture, and a more rationalized pastoral economy. "Such projects will lead to the development of the desert instead of abandoning it, with Bedouins not being confined to limited areas."[24]

While the major areas of importance in the Saudi Arabian developmental plan are spatially restricted and strongly conditioned by environmental factors, their very development in turn creates new environmental problems which must be dealt with in the overall developmental process.

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[24]Kingdom of Saudi Arabia, Ministry of Information, The Great Water Projects (N.p., February, 1971), p. 5.

The reduction of nomadism continues to be a major area of concern in relation to the government's agricultural and water development projects.

General Observations

The limitations of the physical environment and the various social and economic factors that constitute the Saudi Arabian human environment play a vital role in shaping the formal planning policies of the country. Of special importance has been the impact of oil revenues, which make possible rapid progress in the realization of development plans in the major areas of agriculture, water procurement, transportation, communications, education, health, social welfare, and the still largely private sectors of commerce and industry.

While formal planning in Saudi Arabia got off to a slow and uneven start, and was often inadequate to meet the requirements of a modern economy, great steps have been taken to develop a more rational planning procedure, starting with the facilities infrastructure and the organization of appropriate government ministries to pursue the task. Especially instrumental toward this end has been the creation of a Central Planning Organization (CPO) whose make-up and activities will be taken up in some detail in Chapter IV.

CHAPTER IV

SAUDI ARABIAN PLANNING AND DEVELOPMENT: PHILOSOPHY AND STRUCTURE

The composition and organization of the modern Saudi Arabian government is the outgrowth of the conditions and traditions of the Arabian peninsula. The political system is a patriarchal one, strongly dominated by the King and the leading members of the rather extensive royal family. Central ministries, regional administrations, and even municipal governments are headed by appointive officials. There is no tradition of democratic, popular representation and no pattern of checks and balances of the type familiar in most Western governments. Within the ruling circles there is, however, an awareness of major economic and social problems and an evident desire to improve the living conditions of the citizens. With the aid of the Council of Ministers, whose members head the various ministries, the central government is working toward a broader social justice consistent with the Islamic tradition. Under the monarchy, the socialist format familiar in many developing countries, is not regarded with favor, although some similarity in objectives is evident.

The chief planning agency is--in English usage--the Central Planning Organization, or CPO, which is headed by a president of ministerial rank who reports directly to the King. Reports from the CPO are expected to provide the basis upon which five-year plans are to be developed. Key goals of the CPO include developing human resources, increasing the rate of growth of the gross domestic product (GDP), and diversifying sources of national income so that dependence on oil revenues can be reduced and eventually eliminated. Along with the various ministries, two other key elements in the country's planning and development operations are the General Petroleum and Mineral Organization (Petromin) and the Saudi Arabian Monetary Agency (SAMA).

The Development of Formal Planning in Saudi Arabia

Before achieving national unification under his personal authority, King Ibn Saud had been ruler of the Nejd, or Central Region. He governed the area without the aid of ministers and according to a purely patriarchal formula. Although he had advisers, sometimes but not always members of his own family, these did not form an organized group. When Ibn Saud conquered the Hejaz, he found there a somewhat different administrative structure, including a Consulting Assembly and a Council of Deputies to which the

King for a time delegated some executive powers. The Consulting Assembly has been retained in the Hejaz as a purely consultative body, but the Council of Deputies of the province eventually disappeared when the Hejaz was integrated into the rest of the Kingdom and a central Council of Ministers was formed.[1]

The Saudi Arabian government is based on traditional administrative patterns as modified by adaptations from parliamentary systems of government. Although the central government is supreme in many matters, local government continues to be important. Even the official at the lowest level of the traditional administration, the sheikh, himself a hereditary ruler, has the duty of preserving order, punishing crimes, and settling disputes. His freedom of action, like that of the King and the government ministers, is limited by religious laws and customs.[2]

The modern doctrine of government propounded by King Faisal, who was assassinated by a nephew in 1974, constituted a reply to the "socialist route" proposed by certain other

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[1]Touiche, L'Arabie Séoudite, p. 72.

[2]Arthur S. Banks, ed., Political Handbook of the World: 1975 (New York: McGraw-Hill, 1975), p. 229.

Arab leaders such as Nasser of Egypt. More than a political doctrine, it represents an effort to keep change under control and avoid revolution. This approach does not really overlook the necessity for broader social justice and appeals to the Islamic tradition in this domain. The economic doctrine of Faisal can be seen as an effort to safeguard for national purposes the natural wealth of the Arabian peninsula.[3]

Although central planning was not firmly implemented until the 1960's, Saudi Arabia's economic development began in earnest about 1948. By 1955, several years of rapid growth in oil revenues had led the country and its leaders into a cozy familiarity with quick prosperity, including a strong reliance on imported consumer goods.

Owing to financial difficulties, economic growth was retarded between 1957 and 1960, but since 1961 the economy has grown rapidly. The government's development effort has been concentrated on the creation of an adequate infrastructure and, despite many failures and bottlenecks, this effort is beginning to show results.[4]

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[3]F. Frade, "La Doctrine de Faisal," Politique Internationale 87 (September-October, 1966), pp. 81-89.

[4]Knauerbase, "Saudi Arabia's Economy," p. 127.

There was a leveling-off of oil revenues in 1956, however, due in part to a softening of oil prices, and with the exchange crisis of 1956-57, it became apparent that stabilization was needed. Budget deficits, depreciation in the riyal's exchange value, and a huge growth in government indebtedness suggested that Saudi Arabia was unable to cut down rapidly enough on spending.

As a result of the economic crisis of the 1955-60 period an improved system of fiscal planning was implemented. The government's deficit was offset temporarily by borrowing from foreign sources or from the Saudi Arabian Monetary Agency (SAMA), which functions as a kind of central bank for the country. With further support from the International Monetary Fund (IMF), a stabilization was achieved and once more budget surpluses began to appear. "This marked the first deliberate use of fiscal policy for stabilization purposes in Saudi Arabia, and its success paved the way for more attempts at formal planning in the future."[5]

Dr. Anwar Ali, an official of the IMF, suggested in 1958 that a Saudi Arabian Economic Development Committee be set up to design a five-year plan for the period 1959-64.

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[5]Edens and Snavely, "Planning for Economic Development in Saudi Arabia," p. 21.

The Committee would study ministerial projects and proposals, evaluate them, and report its findings to Prince Faisal, the Prime Minister. The Prime Minister agreed to help set priorities for projects to be implemented within budgetary limits, and appointed the Committee. Its members were the Governor of the Saudi Arabian Monetary Agency, two Ministry of Finance economic advisers, and two other ministerial representatives.

The Economic Development Committee was intended to be semi-independent, reporting directly to Prince Faisal, who at the time was also President of the Council of Ministers. The ministries were instructed by the Prime Minister to cooperate with the planning venture by submitting to the Committee their research studies, reports, proposed projects, and other data.[6] The Committee was widened in 1959 to include members of the ministries of communications, petroleum, commerce, health, education, and agriculture.

Despite the economic foresight represented by the Economic Development Committee's formation, and the breadth of its designated responsibilities, it was soon diverted from its basic planning function. Much of the members' time

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[6]Ibid, p. 22.

was spent examining applications from businessmen for protective tariffs and customs duties exemptions. Some of the members, dissatisfied with what the Committee had become, suggested the formation of a stronger body, a full-time Supreme Planning Board. The Supreme Planning Board then created soon ran aground, however, for several reasons, among them a lack of professional staffing at the decision-making level.[7] King Saud, impatient with the performance of his younger brother, Prince Faisal, had taken over again as Prime Minister, and became chairman of the Planning Board. Suitable technical staff members, including much-needed economists, were in short supply, and there was an appalling lack of reliable statistical information. Without a strong sense of direction, little was accomplished until, in a kind of palace revolution, Prince Faisal, in 1961, replaced his older brother as King. In 1965 King Faisal established the Supreme Planning Board's successor, the still-existing Central Planning Organization (CPO).

Though a marked improvement over earlier planning agencies, the Central Planning Organization has not been able to direct all economic change toward government goals.

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[7] Ibid., p. 23.

It has produced periodic economic reports that form the basis for its five-year plans. It seems appropriate at this point to quote at some length the government's long-range social and economic goals as defined by the CPO in 1970:[8]

1. Developing national capacities to enable them to effectively participate in raising the living standards in their local communities.

2. Taking social care of the nationals in their various stages of age.

3. Taking care of certain categories who are physically and socially disabled due to orphanage, disability, old age, widowhood, or sickness.

4. Vocational training for some nationals and preparing them to exercise various profitable trades needed by the community to provide them with a suitable social level.

5. Developing cooperation amongst nationals and utilizing the cooperative methods to meet their various economic and social requirements.

6. Guiding and taking care of youths during exercising their various social and sport activities in their leisure time so that they may acquire certain characteristics which make them good citizens.

7. Technical preparation of national experts needed for social welfare programs so as to expand these programs and propagate them depending on the nationals in the Kingdom.

8. Taking social care of labourers through:

   a. Issuing employment laws which guarantee their rights.

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[8] Report of the Central Planning Organization, 1390 A.H., (Official English translation). Kingdom of Saudi Arabia: The Central Planning Organization. The writer of this dissertation accepts no responsibility for certain linguistic infelicities which appear in this official translation.

b. Training them vocationally.

c. Organizing their employment and recruiting the unemployed.

d. Implementing some social services programs for them and their families.

9. Taking care of the family, maternity, and childhood to enable the family to properly bring up the generation and provide them with the necessary social and sanitary care.

10. Expanding the primary education to accept 10,000 new pupils each year in the primary schools, provided that such expansion be accompanied by increase in the number of trained teachers.

11. Expanding the secondary education through better economic utilization of the services of the existing teachers, and accepting those who are desirous amongst the nationals, and creating the suitable atmosphere to encourage the nationals to attend such an education.

12. Developing the local Education Departments and entrusting to the Director of Education more authorities and duties and establishing local education council from the natives to cooperate with the Ministry of Education.

13. Expanding the technical education and training a larger number of the nationals qualified in such a type of education so as to avail a number of nationals to participate in the economic revival of the Kingdom.

14. Educating the old persons through opening classes for literacy campaign and through using audiovisual media so as to lessen the gap between the education levels in the same family.

15. Expanding the establishment of hospitals, maternity, and welfare centres to cover the far reaching parts of the Kingdom and provide the population with medical care and sanitary guidance to protect themselves against diseases (at five hospitals and ten maternity and infant centres), and providing hospitals with the necessary beds.

16. Establishing the following protective health centres in the course of the coming five years (1964-1969):

a. Malaria eradication project.

b. Smallpox eradication project.

c. TB eradication project.

d. Central Laboratory for public sanitation.

e. Blood Bank project.

17. Constructing water networks in the various towns assisting to provide potable water in this country.

18. Planning towns on sound basis to avail general facilities, establishing gardens, and widening streets.

Structurally, the Central Planning Organization consists of twelve economic advisers under a president of ministerial rank reporting directly to the King. With the assistance of a sizable administrative and clerical staff, the CPO analyzes the economic condition of Saudi Arabia, assists in preparing ministerial development plans and programs, and estimates the funds required to implement the ministerial projects.

Designed to be freer from political pressures than earlier planning bodies, the CPO's direct relationship to the King has facilitated its work. While the government ministers are not numbered among the CPO advisers, the ministries are represented by lower level officials at the CPO meetings. The current administrative design for economic planning appears to be an improvement over earlier structures because of the balance struck between the King and the ministries, and because of the separation of planning and budget functions.

After nearly five years of study and consultation, the 1970 CPO Development Plan was approved by the Council of Ministers and endorsed by the King. The Plan proclaimed that the general objective of economic and social development policy was to maintain the religious and moral values of Saudi Arabia and to raise the living standards and welfare

of its people, while providing for national security and maintaining economic and social stability. These objectives were to be achieved: (1) by increasing the rate of growth of the gross domestic product (GDP), (2) by developing human resources so that the several elements of society would be able to contribute more effectively to production and participate fully in the process of development, and (3) by diversifying the sources of national income and reducing the near total dependence on oil through increasing the share of other productive sectors in the gross domestic product.[9] The Plan was not intended to be a rigid, restrictive set of rules and regulations, but rather a means of bringing increased rationality into public sector programs by establishing priorities and integrating activities so as to avoid bottlenecks and ensure coordination. An especially important aspect of the overall plan was the five-year development plan (1970-75) for the municipalities of the Kingdom of Saudi Arabia.[10]

Under the CPO, more modern and efficient approaches were taken toward the development of regional planning. The

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[9]Kingdom of Saudi Arabia, Central Planning Organization, Development Plan 1390 A. H., 1970 (N.p., 1970), Riyadh, p. 23.

[10]Kingdom of Saudi Arabia, Ministry of Interior, Five-Year Development Plan (1970-1975) for the Municipalities of the Kingdom of Saudi Arabia (Athens, Greece: Doxiadis Associates, 1970).

goal has not been the establishment of absolute equality among all regions and localities in the country. Rather, consideration has been given to the natural capacity and resources already in existence in the various regions as well as to their cultural heritage and historical characteristics. The regions, under any circumstances, cannot be absolutely equalized.[11]

The regional planning approach is typified by the socioeconomic development plan for the northern region of Saudi Arabia. The broad strategies for that region include deployment of some of the manpower resources to other parts of the Kingdom so as to achieve a more balanced economic and industrial growth.[12] Another facet of the five-year plan was the designation of seven regional cities which were to be the nucleus around which the major regions of the Kingdom could be identified. These cities were Mecca, Medina, Riyadh, Dammam, Jizan, Abha, and Ar'ar.

Petromin and SAMA

Alongside the CPO, another key element in Saudi

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[11]Abdul Aziz Phillimban, An Approach to Regional Planning in Saudi Arabia (Kuwait: Kuwait Institute of Economic and Social Planning in the Middle East, May, 1968), p. 2.

[12]Kingdom of Saudi Arabia, Central Planning Organization, Socio-Economic Development Plan: Northern Region of Saudi Arabia (London: Economist Intelligence Unit, Ltd., 1974).

Arabia's economic development activities has been the General Petroleum and Mineral Organization (Petromin), which was founded by the government in 1962. In addition to acting as the government's agent in arranging and supervising oil exploration concessions to foreign-owned companies, Petromin and its affiliates often engage in joint-venture petroleum industry operations with foreign firms.

The Saudi Arabian Monetary Agency (SAMA) has functioned since the early 1960's as the government's auditor, fiscal control center, and statistical analyst, and has performed many of the functions of a central bank. In addition to supervision of the operations of private commercial banks, SAMA in 1965 established the government Agricultural Bank to extend short- and medium-term loans to farmers. In 1970, SAMA announced that an industrial bank, to be known as the Industrial Finance Institution, would begin operations sometime in 1971, and that another "bank for people of small means" would be established the following year. [13]

In recent years, the Saudi government has become

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[13]Norman C. Walpole et al. Area Handbook for Saudi Arabia (Washington, D.C.: American University Press, 1971), p. xxxvi.

increasingly active in the fields of labor legislation and housing development. The government in November, 1969, promulgated an array of new labor legislation and established a new system of social security insurance. The labor legislation comprises a comprehensive body of regulations that, among other things, provides for training centers, employment offices, and a special commission to hear and resolve labor disputes. It also includes detailed regulations concerning safe working conditions, hours of work, overtime pay, vacations, and sick leave provisions. The government has also created a housing finance corporation which subsidizes new housing construction with interest-free loans. Before the 1950s, the Saudi Arabian government played a relatively minor role in the organization of social services. Since then it has assumed increasing, and often direct, responsibility in the field of social welfare and is participating in numerous public health and welfare programs, particularly in the medical sphere.[14] A national social security system, with many similarities to those in Western countries, is in the process of implementation.

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[14]Ibid.

The aim of the five-year development plan scheduled for completion in the spring of 1975 was to spend between $50 billion and $100 billion over the five-year period on industrialization and social welfare. While the first CPO plan can be judged as a general success, the administrative costs have been high, and some of the detailed plans have faltered. As a writer in The Economist put it, "...with nearly 60 foreign consultant firms advising the various ministries, an already over-stretched bureaucracy is in danger of being swamped."[15]

The implementation problems are partly due to the shortage of domestic technical personnel. While the economic reports produced by the CPO were essentially qualitative rather than quantitative, recent developments in Saudi Arabia suggest that the process of formal planning is continuing to improve. Edens and Snavely, in their overview of recent development, are generally optimistic:

> Much social capital has been created in Saudi Arabia over the past two decades. Vast outlays of funds have been made and the welfare of the people has unquestionably been improved.[16]

No comprehensive report on the 1970-1975 plan, with a detailed accounting of its successes and failures, has been issued

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[15]"Saudi Arabia Works Out How to Spend It All," The Economist, November 30, 1974, p. 93.

[16]Edens and Snavely, "Planning for Economic Development in Saudi Arabia," p. 27.

by the Saudi government or external agencies.

Evaluation of the Saudi Arabian Planning Operation

Through the agency of planned development, much social progress has been made in Saudi Arabia over the past two decades. Even with no application of a democratic philosophy or procedures, the Saudi alliance of spiritual and temporal power has been of such a nature as to encourage economic and social equality within a free enterprise, but still planned economy. Formal planning has been aimed towards a balanced regional development through social evolution, not revolution. Appropriate domestic financial institutions have been devised and instigated with emphasis on solvency and self-sustained growth. Foreign resources and technical assistance have been utilized where expedient. What is unusual in the Saudi development model is the near total reliance on a single source of wealth, petroleum, for which there is--fortunately--a universal and growing demand. While in the long run the high dependence on petroleum must be considered a weakness, the immensity of the short- and medium-term revenues has nevertheless made possible a rapid and reasonably well balanced regional development under central government direction and funding.

While the development of planning in Saudi Arabia

prior to 1970 had been informal and intuitive, it was still relevant in view of the existing social and economic conditions. Even the early planning emphasized growth in the infrastructure and the development of human resources. Most general appraisals of the current planning function in Saudi Arabia suggest that the process is working well. The Central Planning Organization, guided directly by the King, was designed to be relatively free from special-interest political pressures and had a fair amount of flexibility. Preliminary planning often originated in the various ministries which eventually had the responsibility of implementing the details of the CPO Plan. There is a central government Department of Statistics which is developing an extensive body of accurate, basic statistical data. Every effort has been made through the various media, newspapers, radio, and television, to acquaint the public with the goals and plans of the government.

Most of the deficiencies that do exist in the technical quality of planning in Saudi Arabia can be attributed to the spreading of scarce expertise too thinly over the governmental organization in general. This is an all too frequent characteristic of underdevelopment throughout the Third World, and Saudi Arabia is by no means unique in this respect. Edens and Snavely found the quality of

formal planning in Saudi Arabia to be steadily improving, but suggested these modifications:[17]

1. A non-political administrator--who ideally would be a well-trained economist--should be president of the CPO, which organization should be directly under the Prime Minister or chief executive officer of the government. Some additional technical advisors should be assigned to the planning agency.

2. An informal and flexible organizational structure, plus access to accurate statistical data, are needed by the CPO and all subordinate or related planning agencies.

3. Ministries and non-ministerial agencies should originate most planning ideas, and when formal programs are constructed and adopted, they should have the full support of the government and should be presented clearly to the public. Formal plans should carry the force of law and should be accepted by the chief executive, the Council of Ministers and the Parliament when currently discussed plans for a parliament are implemented.

The 1975-1980 Plan

The Central Planning Organization was renamed the

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[17]Edens and Snavely, "Planning for Economic Development in Saudi Arabia."

Ministry of Planning after the death of King Faisal in 1975, and a new five-year plan was begun under the direction of the Ministry.

Among the stated goals of the second five-year plan were these:

1. Maintain Islam's religious and moral values.

2. Insure the Kingdom's internal security and defense.

3. Maintain a rapid rate of economic growth by maximizing oil earnings, developing economic resources, and conserving depletable resources.

4. Lower economic dependence on crude oil exports.

5. Maintain and develop human resources through improvements in education, training, and health standards.

6. Increase the well-being of all citizens, and maintain social stability despite rapid social change.

7. Develop the means to implement the stated goals.[18]

Development under the first five-year plan is apparent in many sectors of the economy and the society. In rural areas, water supply projects were undertaken and agricultural credit expanded significantly. Agricultural

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[18]The Kingdom of Saudi Arabia, Ministry of Planning, Second Development Plan, 1975-1980 (Riyadh: The Ministry of Planning, 1975), p. 4. The wording is from the official English translation.

development was assisted by a variety of subsidies. For the industrial sphere, the production of crude petroleum expanded rapidly and came increasingly under the control of Petromin. Licenses were issued to a number of new companies, mainly Italian, French, and Japanese enterprises, for the exploration and development of mineral resources. Overall, commerce grew rapidly, and construction activity more than doubled during the plan period.

As to the development of human resources during the 1970-1975 period, the labor force grew by about 20 per cent, to a level of 1.6 million persons. The education system expanded to the point that by 1975 about one of every seven persons in Saudi Arabia was enrolled in an organized educational program. Health services were also extended, with an increase from 47 to 62 in the number of hospitals, and a 140 per cent increase in the number of physicians. First aid centers have been established in many rural areas, and likewise a number of other facilities run by the Social Welfare Department. A social insurance law was proclaimed, and youth welfare programs were introduced.

Stressing the basics in transportation, the Kingdom was able to achieve a fundamental network linking major commercial and administrative centers with roads and air routes. Progress was also made in telecommunications,

municipal services, and housing. Housing construction, which is mainly in the private sector, has been hindered by rising costs and shortages in land, labor, and materials.

The second five-year plan, then, seeks to upgrade the social and economic characteristics of the nation while retaining the moral and religious values of Islam. Under the new plan, the government will continue to promote more housing, expand communications, develop transportation facilities, and see to the basic needs of municipalities. Basically, the plan's philosophy is one which attempts to balance economic freedom and social welfare.

> The economic system of Saudi Arabia is based on the principles of free economy where a substantial part of the production and distribution of goods and services is left to individuals and groups enjoying freedom in their dealings and transactions. While the government of Saudi Arabia will uphold the market system and encourage the private sector to play a fundamental role in the accelerated growth and development of the country, it will take all necessary measures to make the market system conform to the larger social interests of the country.[19]

Social Barriers to Development

In addition to deficiencies inherent in the economic aspects of planning in Saudi Arabia, such as the persistent shortage of skilled labor, a number of other obstacles stand

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[19]Ibid., p. 5.

in the path of development on the Western model. Foremost among these obstacles are the various social barriers to development that involve the role of culture, women, and secularization. Social scientists have for some time recognized these socio-cultural factors as important in economic development. Development, it is now realized, involves changes in a society's attitudes, social structure, and values.

In relation to economic development, there are a number of cultural traits in the Arab world that may be throwing up barriers. According to Al-Fayez, they include:

1. A preference for office and white collar work over manual and industrial work, and a preference for commercial rather than industrial ventures;

2. Reluctance to move away from patriarchal or hierarchal grounds of authority within blood kinship to an industrial structure's professional or hierarchal system;

3. A preference for partnerships and skepticism toward corporate forms, factory organization and labor unions;

4. An attitude toward time that upsets industrial organization, and reluctance to move from rule-of-thumb to rational business calculation methods;

5. A tendency to maintain fatalistic attitudes instead of accepting technical and economic possibilities, and, generally, lack of experience in industrial work;

6. A basic inability to link closely efforts with rewards.[20]

In addition to being a religion, Islam is a way of life, with far-reaching implications for development. Its teachings outline a way of life that encompasses the economic, political, legal and social structure within which Muslims live; it is both secular and other-worldly. Because of their pervasiveness, the social factors in economic development are interwoven with religious attitudes in Saudi Arabia. Though some argue that Islam deprives individuals of free choice and makes them directly subject to Allah's will, Fayez contends:

> . . . Islam as a whole views the individual as a free agent responsible for whatever action he may undertake . . .
>
> . . . Islam sanctions private ownership of the means of production and provides a framework for a system of free enterprise and free competition.[21]

The Role of Women

The subordinate role of women in Muslim society has been a focal point of attack on the Islamic social system. Critics contend that Islam enslaves women and hinders them

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[20]Al-Fayez, Economic Development of Saudi Arabia, p. 120.

[21]Ibid., p. 123.

from engaging in economic life. By permitting polygamy, women are said to be downgraded and accorded an inferior social status. In any case, because of increased educational opportunities for females, and the ferment in current economic-social conditions, polygamy in Saudi Arabia is becoming a rare thing, especially in urban centers.

Another argument contends that Arabian tradition and practice, rather than Islamic teachings, keep women in an inferior position. Islam does allow women to retain their maiden names, to be the guardians of their own children, to sell property without their husbands' or guardians' permission, and to practice a profession or trade without their husband's approval. It provides them with inheritance rights they had not enjoyed prior to the prophet Mohammed's time, and specifically gives them the right to divorce. To be sure, the traditional male-dominated

> . . . society has in the past kept them ignorant of their legal rights and unable to insist upon the proper use of machinery which the law has provided for their protection.[22]

Any denial to women of the right to social participation will, without doubt, have a negative effect on social growth.

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[22]Ibid., p. 126.

Resistance to Secularization

Despite a recent trend toward some secularization in government and in certain sectors of the private economy, Saudi Arabia remains a basically Islamic society, albeit without its past isolation. The trend toward secularization is especially evident in the larger cities where there is easier access to the outside world. The trend is not basically anti-religious, but does serve to reduce the amount of religious control over the everyday affairs of the people.

During the time of Abd Al-Aziz, the old religious title of Imam reserved for the nation's ruler was exchanged for the title of King. In the Islamic system, the King is still expected to serve the Lord, but insofar as his administrative and economic responsibilities are concerned, he is not considered the Lord's anointed. The state's original religious foundation was not forgotten, however, and in a sense the founder of the dynasty and the preacher of Wahhabist religious conservatism continued to define and perpetuate the Unitarian doctrine of Islam.

The increasing importance of new leadership elements in the society has accelerated the trend toward secularization. The government's simplistic structure of earlier times has been modified to the point where it is now a bureaucracy more Western than Islamic in its organization

and approach. The modern Saudi Arabian army, the air force and the new infant navy have been put in Western uniforms and taught Western techniques. The tribal levies of an earlier day, whose specialty was learning how to raid hostile neighboring tribes, have given way to a modern military force capable of operating effectively on the regional or international scene. At home and abroad, youth studying science and the Western humanities are learning subjects far removed from the Islamic curriculum. The science-emphasis curriculum of the new University of Petroleum and Minerals at Dhahran exemplifies the modernization of education within the country. Industrial workers are learning that progress depends on technical skills, and the ranks of management are being filled with competent, Western-trained Saudi citizens. The government itself is showing a willingness to push for change by, for instance, investigating schemes to settle Bedouin nomads in agricultural communities.

Conservative elements in the society have strongly resisted secularization. They consistently defend the Koran as supreme even while ignoring some of its teachings concerning the rights of women. Some progressives in the country assert a need for a modern constitution. While the strength of the conservatives in Saudi Arabia is still

considerable, their influence seems to be slowly but inevitably receding, even at the highest levels of the administration.

Certain changes in the older elements of the society have weakened the conservative position. For example, the royal family has assigned a number of the highest lay offices, including ministerial positions, to commoners rather than reserving them exclusively for royalty. The independence once enjoyed by tribal sheikhs and provincial governors has been restricted by official directives and the extension of central government authority. Traditional constraints on the development process, as that process is conceived and carried out by the King and his Ministry of Planning, are few and unimportant, especially in those aspects of society concerning industry, commerce, and general social mobility.

Chapter V

RECENT TRENDS IN REGIONAL DEVELOPMENT (1964-1973)

This chapter is an examination of economic and social changes in Saudi Arabia during a recent ten-year period for which reasonably reliable data are available. These data are presented, when possible, in relation to five major regions of the country into which the cities and smaller settlement sites can be clustered. Graphic devices are employed to portray the extent of change in key economic and social indicators between the beginning and end of the ten-year period. Because of the lack of more detailed regional data, a precise picture of interregional flows of people and goods cannot be presented. The same can be said for any delineation of growth poles of relatively small radius around a given city. However, a portrayal is possible which shows a comparison of the major regions with regard to population trends, education and health facilities, roads, agriculture, water projects, and industrial development.

Population and Housing

As mentioned in Chapter III, census taking has not been an important concern of the Saudi Arabian government

until the recent period. Official figures are available for only two census years, 1963 and 1974, thus spanning the approximate period for which social and economic changes are considered in this dissertation. Table 4 shows regional population data for Saudi Arabia for the period 1963-74, during which there was about a 12 percent overall increase. This is a significantly lower rate of increase than is characteristic of most Middle East countries. Figure 8 shows the regional distribution of the population for 1963 and 1974 in graphic form. It is evident that the Western Region gained more population than did the other regions, with the Central Region (Region I), even though it includes the capital city of Riyadh, actually declining in numbers. The relatively more arid Central Region, with its colder and more unpleasant winters, lost tens of thousands to the Western Region over the eleven-year period between 1963 and 1974.

The population growth and movement during the period under review has created some severe housing problems. Housing even in the private sector is financed to some extent by the government. For instance, any citizen who has land and wants to build a home for himself and his family can receive a loan for up to 300,000 riyals free of interest for a period of 25 years, paying back only 70% of the loan. Loans are also made to individuals who want to build large apartment

TABLE 4

REGIONAL POPULATION DATA FOR SAUDI ARABIA: 1963-1974

	1963	1974
Region I	1,977,000	1,788,915
Region II	1,841,000	2,273,402
Region III	482,000	769,648
Region IV	1,312,000	1,418,342
Region V	593,000	889,337
Total	6,205,000	7,136,644

SOURCES: Official population censuses of Saudi Arabia, only of two which have been taken.

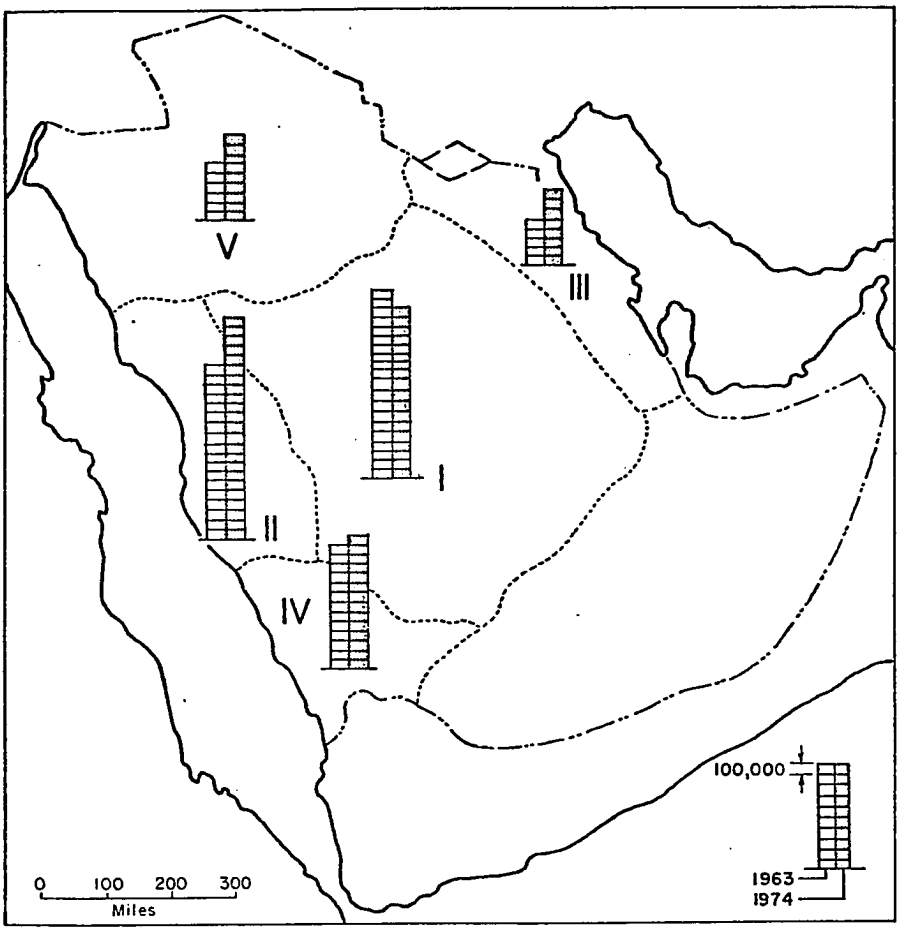

FIGURE 8. SAUDI ARABIA—REGIONAL POPULATION, 1963 AND 1974.

complexes. As a result of this government aid and encouragement, housing construction is booming. In the capital city of Riyadh it extends some 15 to 20 kilometers from the city center. The Ministry of Finance and National Economy itself has undertaken to build housing for the lower income people, and such construction can be seen in several of the major cities of Saudi Arabia.

Education

The need for an expanded and improved educational system is well understood in Saudi Arabia where hundreds of government positions are vacant because the number of qualified Saudis is very small.[1] To remedy the lack of a skilled native work force, the Saudi government has committed itself to reduce as rapidly as possible the illiteracy rate which is still estimated at approximately 75 percent.[2] Free education is being provided at all levels, and new schools are under construction in all parts of the country from elementary school through colleges. Future plans call for a 200 percent increase in both student body and teacher

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[1] Knauerbase, "Saudi Arabia's Economy," p. 128.

[2] United Nations Educational Scientific and Cultural Organization (UNESCO), Statistical Year Book, Paris, 1973, p. 60.

populations--over and above the four-fold increase of the past decade.[3] Facilities are even provided for the education of the infirm and mentally retarded members of Saudi Arabian society. Stipends are being awarded by the Ministry of Higher Education to thousands of young students desirous of pursuing specialized higher education in foreign countries.

The still urgent goal of reducing basic illiteracy is the task of the elementary schools. From 1960 to 1970, the number of elementary schools in Saudi Arabia increased from 582 to 1,472, while the number of intermediate and secondary schools witnessed a four-fold increase, from about 50 to 200. During the same period the number of students at all levels jumped from approximately 100,000 to over half a million.[4] Figure 9 shows regional organization of Educational districts as of 1973. Figure 10 shows the increase in students, classes, schools, and teachers for the 1964-1973 period. Figures 11 and 12 compare the regional distribution

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[3]Kingdom of Saudi Arabia, Ministry of Finance and National Economy, Statistical Yearbook (Riyadh: Central Department of Statistics, 1972).

[4] Feifert, Baker, and Kettani, Energy and Development: A Case Study, p. 30.

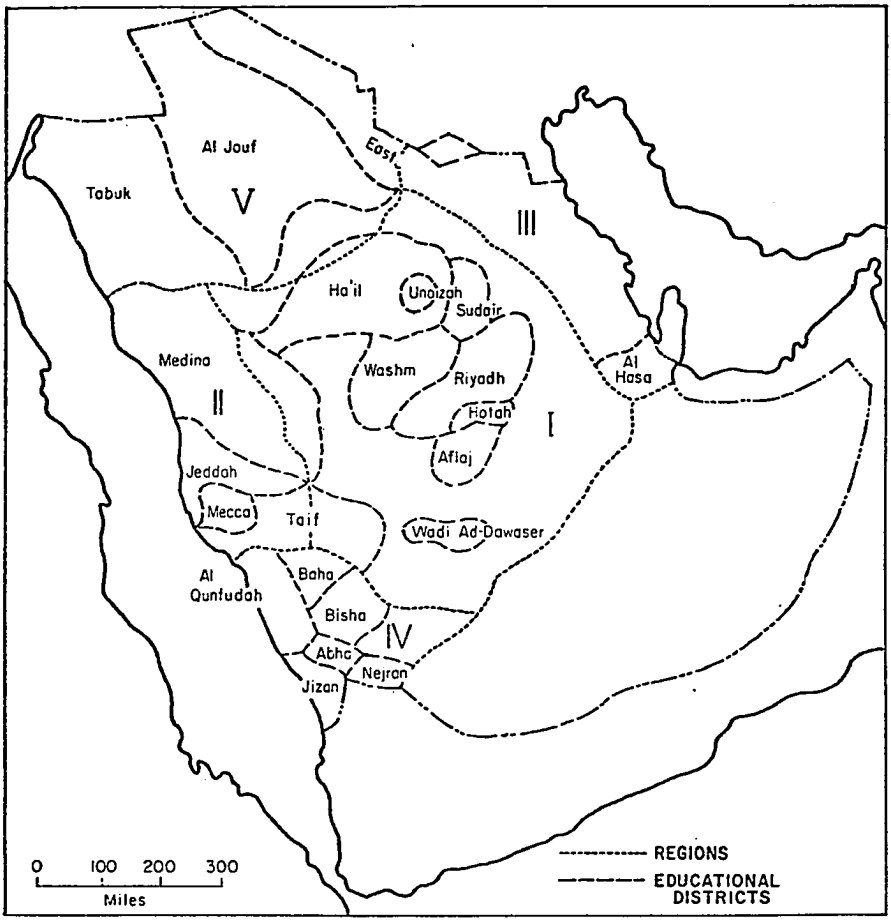

FIGURE 9. SAUDI ARABIA—EDUCATIONAL DISTRICTS, 1973

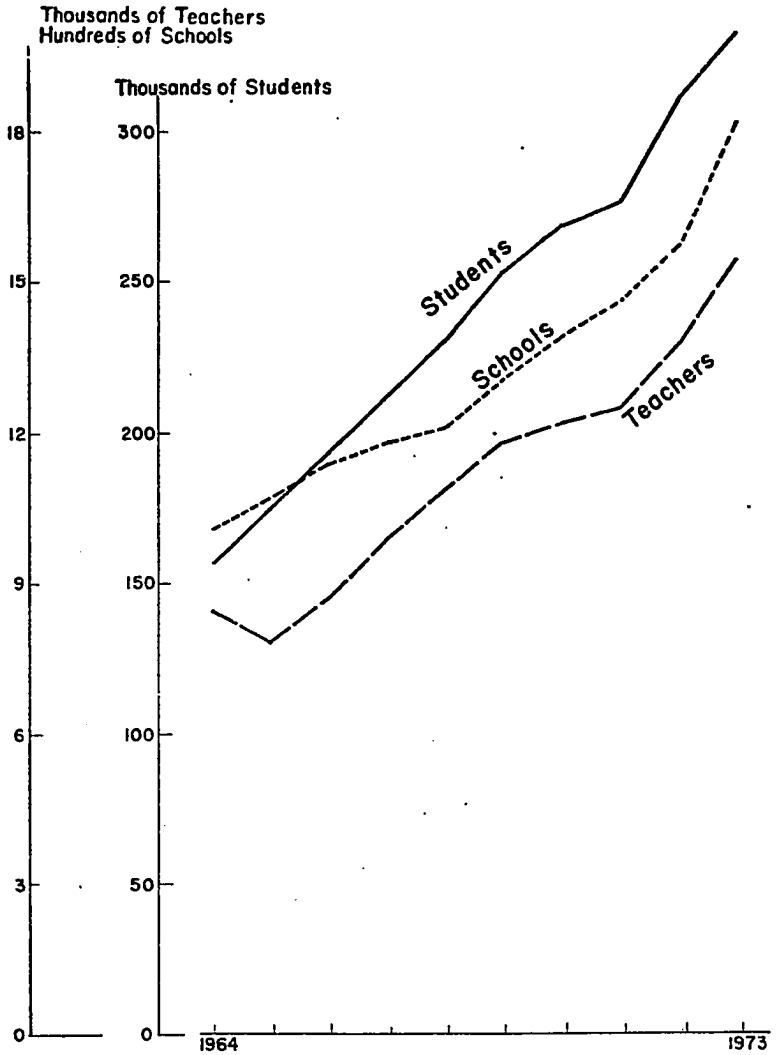

FIGURE 10. SAUDI ARABIA–GROWTH OF ELEMENTARY EDUCATION, 1964–1973.

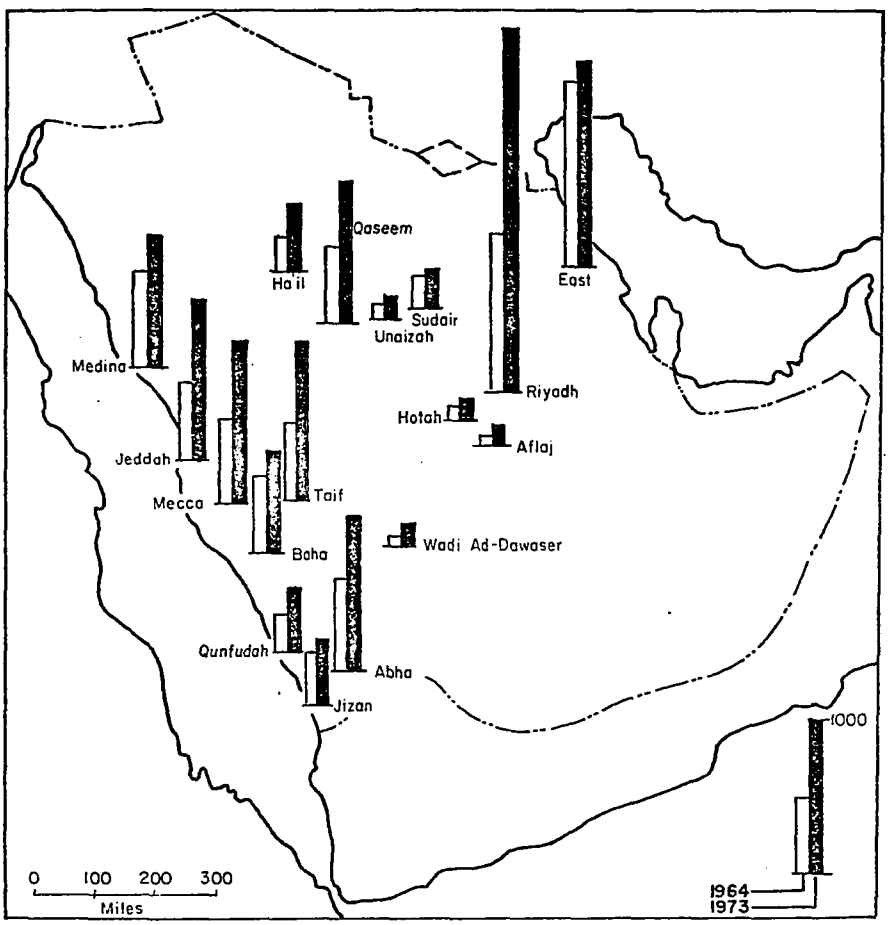

FIGURE 11. SAUDI ARABIA—NUMBER OF ELEMENTARY-LEVEL TEACHERS BY EDUCATIONAL DISTRICT, 1964 AND 1973.

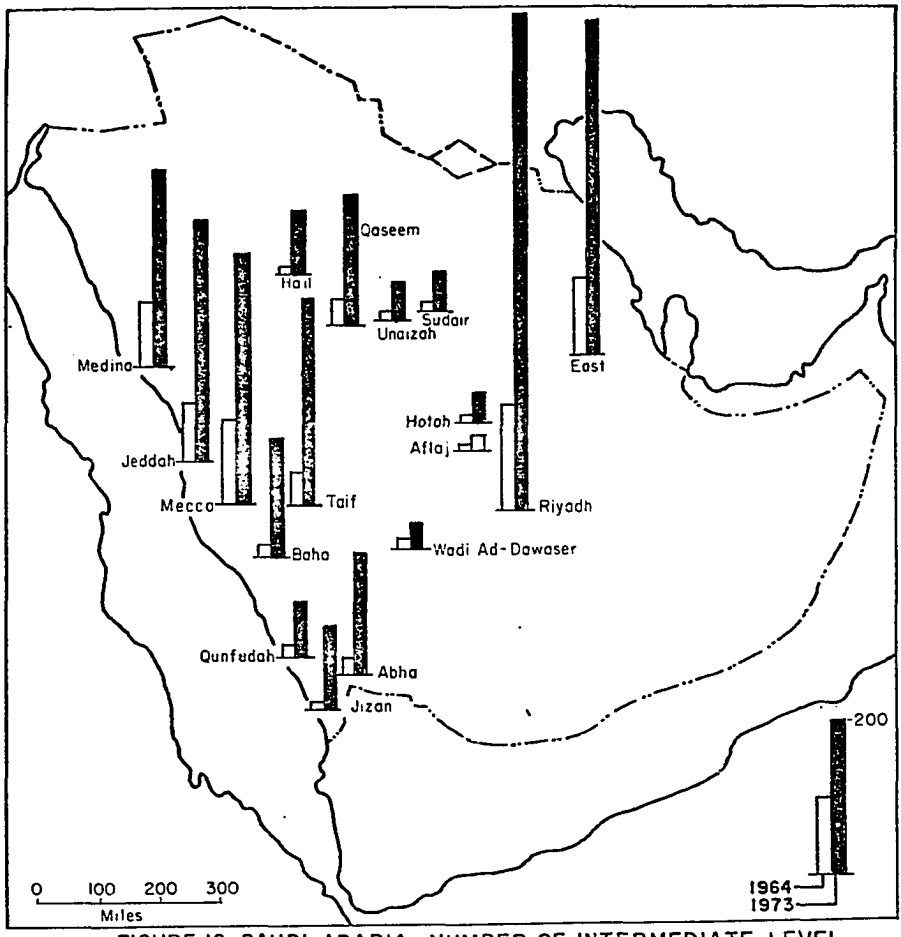

FIGURE 12. SAUDI ARABIA–NUMBER OF INTERMEDIATE-LEVEL TEACHERS BY EDUCATIONAL DISTRICT, 1964 AND 1973.

of elementary and intermediate level teachers for the years 1964 and 1973.

The elementary school curriculum in modern Saudi Arabia, which extends over a period of six years, includes considerable attention to the area of Islamic religious studies. For instance, in the sixth grade some nine out of every thirty-five hours of study are devoted to religious instruction. Of the remaining twenty-nine hours, social studies take up three hours, mathematics six hours, science and health six hours, language skills nine hours, and extra-curricular activities (painting and drawing) two hours.[5] This curricular pattern has not changed significantly in recent years.

Higher education, which was practically nonexistent prior to 1950, has come in for major attention, along with lower level studies. At present there are six universities in Saudi Arabia, with a total enrollment exceeding 11,000 students in 1973-74 and 15,000 in 1975-76. Many of these students are in technical and vocational training programs. The overall purpose of higher education is to promote the general progress of the country and help to create future leaders in every field.

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[5]Kingdom of Saudi Arabia, Ministry of Education, The Progress of Public Education, 1959, p. 14.

Riyadh University, established in 1957, is the foremost facility for higher education. Faculties of the University of Riyadh are those in Arts, Science, Pharmacy, Commerce, Agriculture, and Engineering, listed here in the order in which they were founded. Each faculty consists of several divisions; for example, the Faculty of Arts includes history, geography, Arabic language and literature, and English language and literature. The graduate program of Riyadh University emphasizes master's degrees in the arts and sciences. Graduate level scholarships are available for students who want to pursue advanced studies in the United States and England. Vigorous efforts are being made to recruit professors for Saudi Arabian universities from various parts of the world. Riyadh University, the most fully developed of the higher education institutions in the country, is currently seeking accreditation from various United States and other foreign accrediting organizations. A consolidated campus is under construction to replace facilities scattered over various areas of Saudi Arabia's capital city.

In addition to Riyadh University, there are several other independent colleges and universities. These are public institutions, but the number of their enrolled students is still relatively small. They include the Islamic

University of Medina, King Abdul-Aziz University in Jeddah with a separately administered branch in Mecca, the University of Petroleum and Minerals in Dhahran, and the University of Imam Mohammed ben Saud in Riyadh whose curriculum is largely restricted to Arabic and Islamic studies. The trends in higher education in Saudi Arabia are shown graphically in Figures 13a and 13b. According to the Minister of Higher Education, two new institutes of higher religious education will be opened soon: a Muslim Statute College in Abha Asir, and an Institute of Religious Teaching in the Quaseem region. [6]

Health

The role of health in economic development has a significance comparable to that of education. A large number of people in Arabia are idle or unproductive due to health problems. Adult disabilities are widely evident, and high mortality is characteristic especially among infants and the very young.

Health facilities, extremely limited even in the recent past, have been greatly expanded in the last decade.

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[6] Okaz (Jeddah), November 21, 1976.

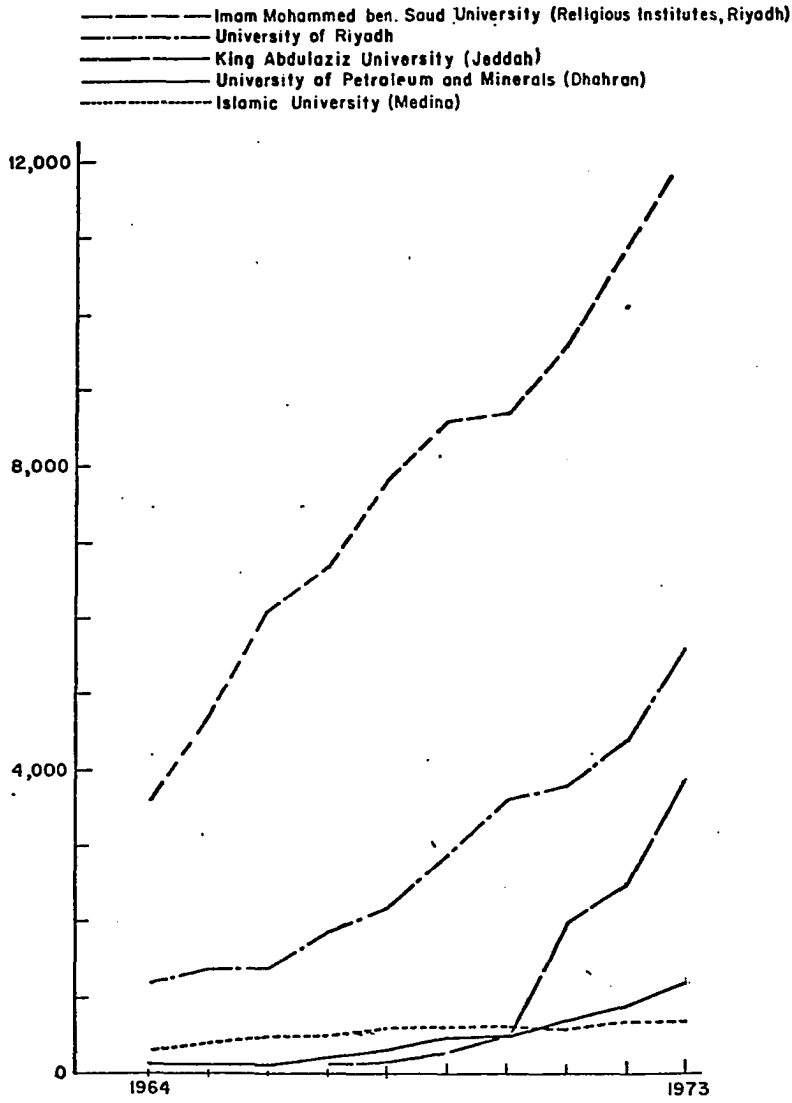

FIGURE 13a. SAUDI ARABIA—STUDENTS IN INSTITUTIONS OF HIGHER EDUCATION, 1964-1973.

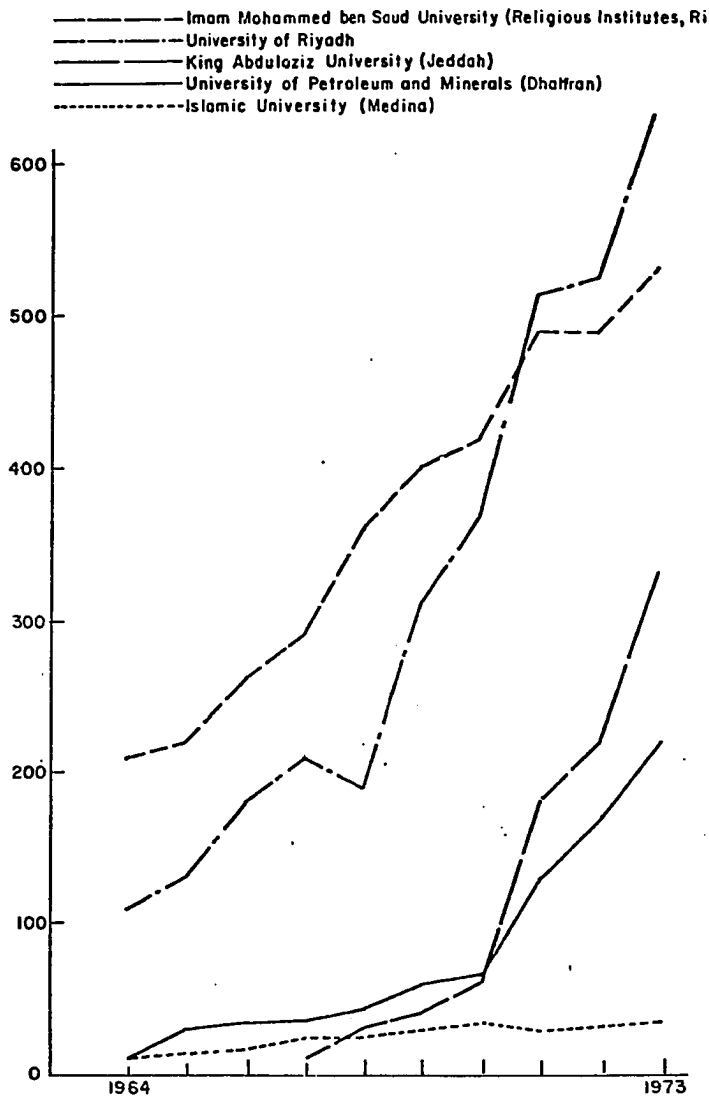

FIGURE 13b. SAUDI ARABIA – FACULTY IN INSTITUTIONS OF HIGHER EDUCATION, 1964–1973.

The government's long-range goals include vastly improved sanitation facilities and enlarged programs of preventive hygiene and nutrition. New dispensaries and health centers have been provided in a number of localities, and there has been an accompanying increase in hospitals, hospital equipment, and medical personnel. Health services in Saudi Arabia are free for all, and health programs have been given top priority in government planning. In 1973, the Kingdom had about eighty hospitals, providing some 6,800 beds, and perhaps 500 smaller dispensary and health units.[7]

Major problems still face the government in the public health area. Attention is being given not only to the production of medical manpower and the construction of health establishments, but also to health education, malnutrition, disease prevention, the assembly of vital and health statistics, and coordinated health planning.[8] Since 1964, the growth in budget allocations for health and health facilities has been substantial. Figure 14 shows the health

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[7]Kingdom of Saudi Arabia, Ministry of Health, Department of Statistics, Statistical Yearbook, 1973, Riyadh, n.d., p. 58. A dispensary is a health station in which a physician works. A health unit is a facility in which officers or male nurses work, but not physicians.

[8]United Nations, World Health Organization, Report on a Health Survey of Saudi Arabia (Regional Office for the Eastern Mediterranean, July, 1963).

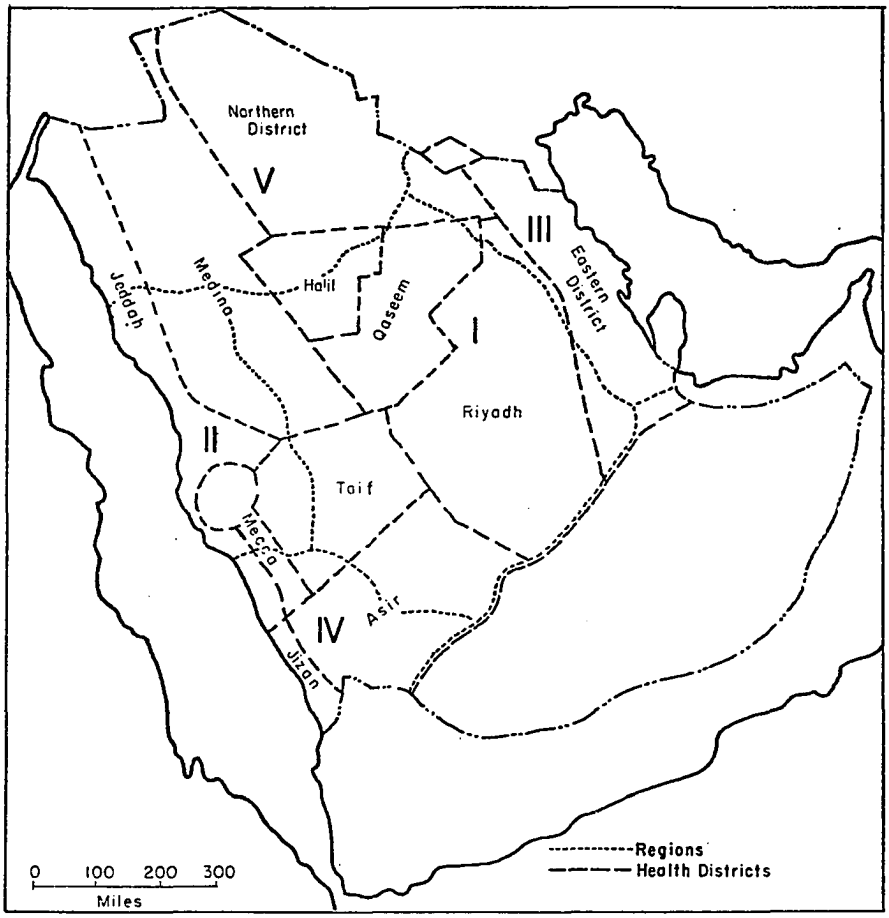


FIGURE 14. SAUDI ARABIA—HEALTH ADMINISTRATION DISTRICTS.

administration districts as of 1974 in respect to the five political regions considered in this study. The Ministry of Health appropriations rose from a little over 100 million riyals in 1964 to more than 600 million by 1974 (Figure 15). Figure 16 shows the increase in hospitals, dispensaries, and health centers over the period 1964-73.

Health planning for Saudi Arabia is a difficult task. Health improvement was included in the general development plan for 1970-75, but the achievements are less impressive than in some of the other sectors of the economy. As in other areas of planning, there has been a serious lack of reliable vital and health statistics. Also, there has been an insufficient number of competent health planners and administrators to implement and supervise the plan.

In recent years there has been a great emphasis on training more native Saudi Arabians in the medical health centers. Figure 17 shows the increase in the number of nurses and other health institute graduates over the ten-year period ending in 1974. In 1976, the College of Medicine of the University of Riyadh graduated twenty doctors, and the King himself attended the graduation ceremonies (Figure 18).

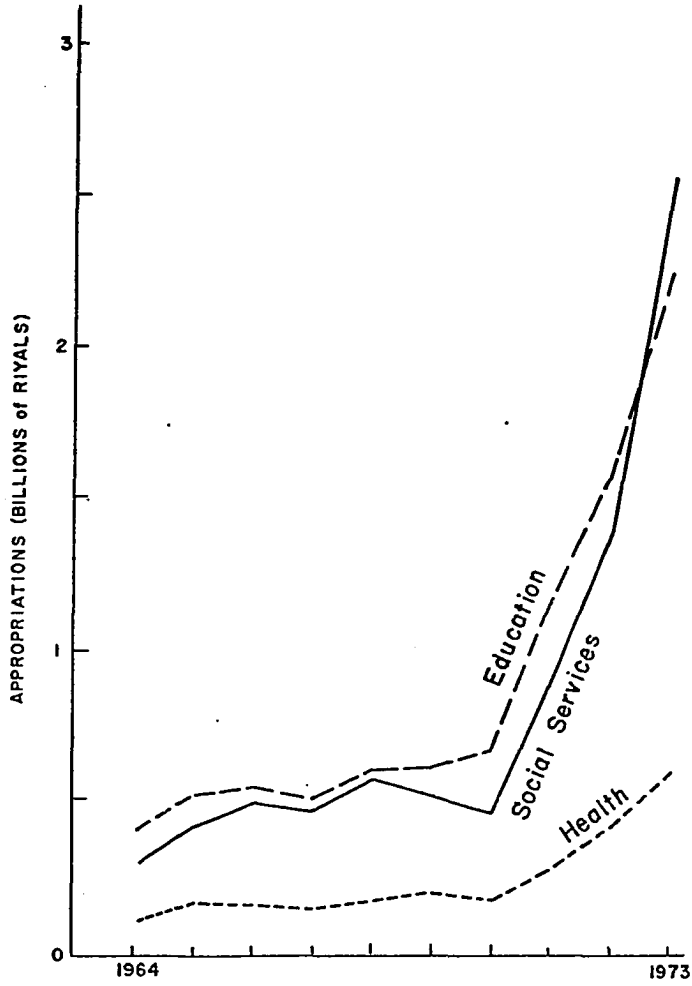


FIGURE 15. SAUDI ARABIA-GOVERNMENT APPROPRIATIONS FOR HEALTH, SOCIAL SERVICES, AND EDUCATION, 1964-1973.

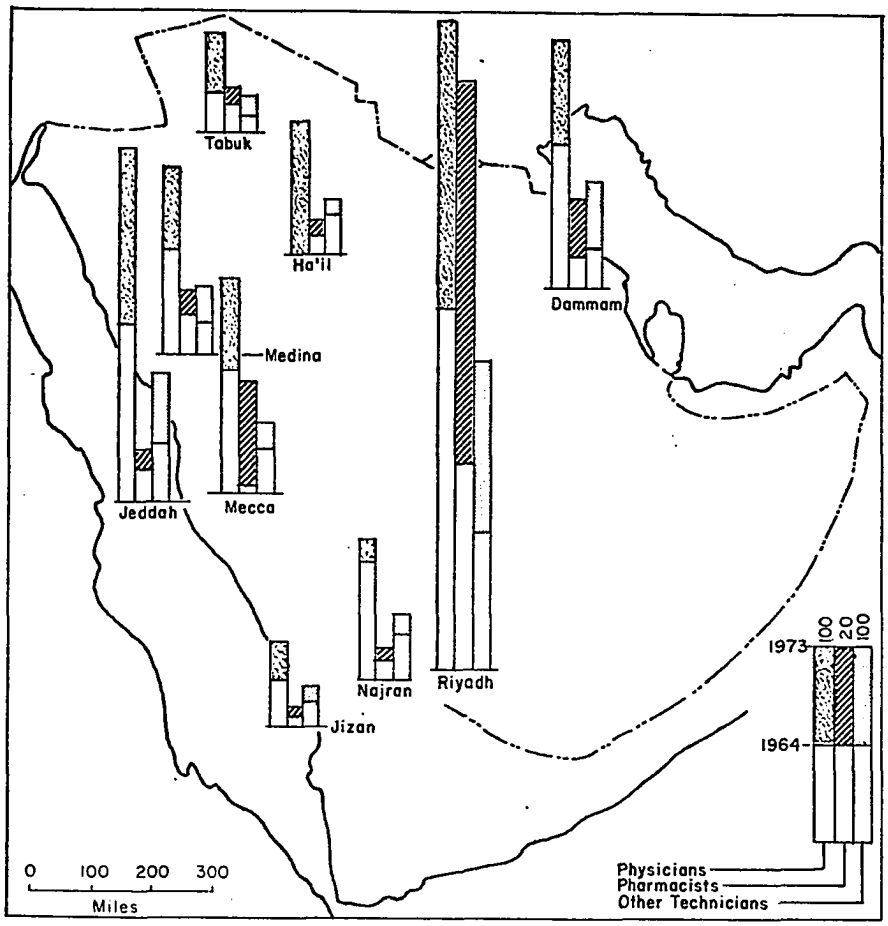


FIGURE 16. SAUDI ARABIA—NUMBER OF HEALTH PERSONNEL IN MAJOR CITIES, 1964 AND 1973.

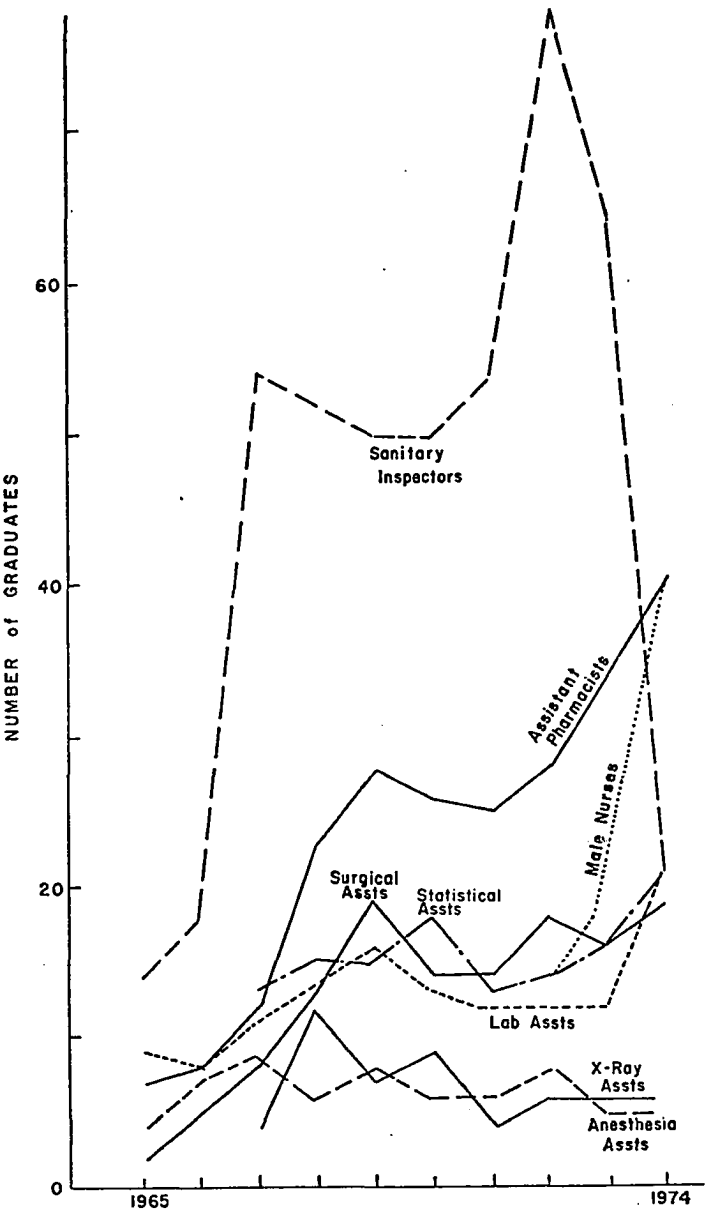
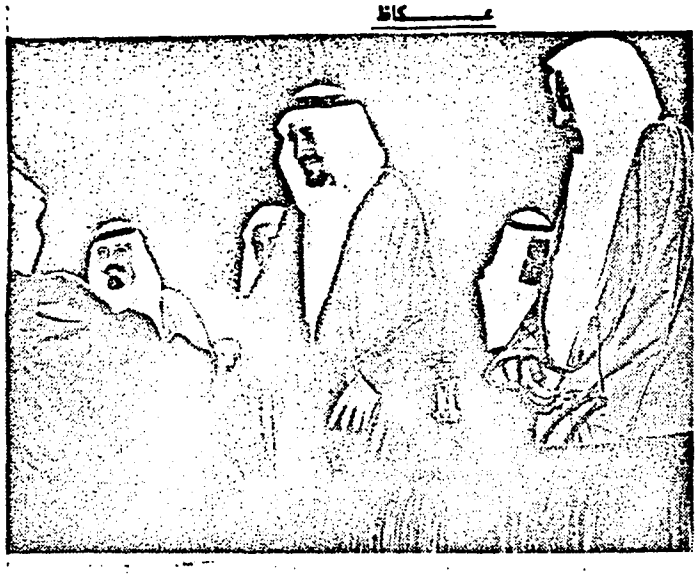
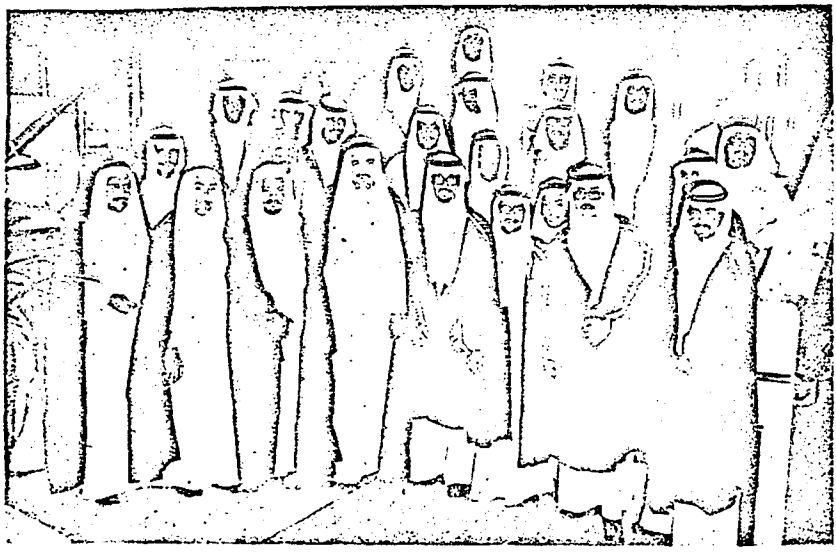


FIGURE 17. SAUDI ARABIA–HEALTH INSTITUTE GRADUATES, 1965–1974.



جلالة الملك خالد يوزع الجوائز على احد الخريجين (تصوير : عبد المنعم حامد)

A graduate student receiving his M.D. from the King of Saudi Arabia.



● حفل تكريمي اقامه الوالد حسزمنتى بمناسبة تخرج اول دفعة من كليـــة الطب في الرياض بفنـــدق استوكهولم تحت رعاية معـــالي الشيخ حسن ال الشيخ ومعالي الدكتور حسين الجزائري ومعـــالي الدكتور عبد العزيز القدا ●

Figure 18

The Graduating Class of 1976 in Medicine, University of Riyadh, Saudi Arabia. Source: Okaz, Jeddah, November 9, 1976.

Transportation and Communications

The evolution of surface transportation and road building was discussed in general terms in Chapter III. As shown in Figure 19, by the year 1964 several new roads were either under study or in some stage of construction. Major highway construction after 1964 includes the road from Al Dailam to Al Sulayil for a distance of 557 kilometers, the 473 kilometer road from Bir Sagras to Al Hawiyah, the road between Taif and Tihama which extends for about 500 kilometers. The purpose of this last road was to open a route to the southwestern part of the country, a region which in the past had been very isolated from other settled areas. The official opening of this road by the King in 1976 made the southwestern region much more accessible. Because of its altitude and relatively attractive climate, the government plans to make this region into a kind of tourist area.

Road construction continued to accelerate between the years 1964 and 1973. The total length of asphalted roads more than doubled during the decade of the 1960's, extending to 8,021 kilometers by 1970. A general summary of road development programs for the 1964-1973 period is shown in Table 5. The rate of road development suggests the high priority given to planning, designing, and constructing new roads throughout the inhabited parts of the country.

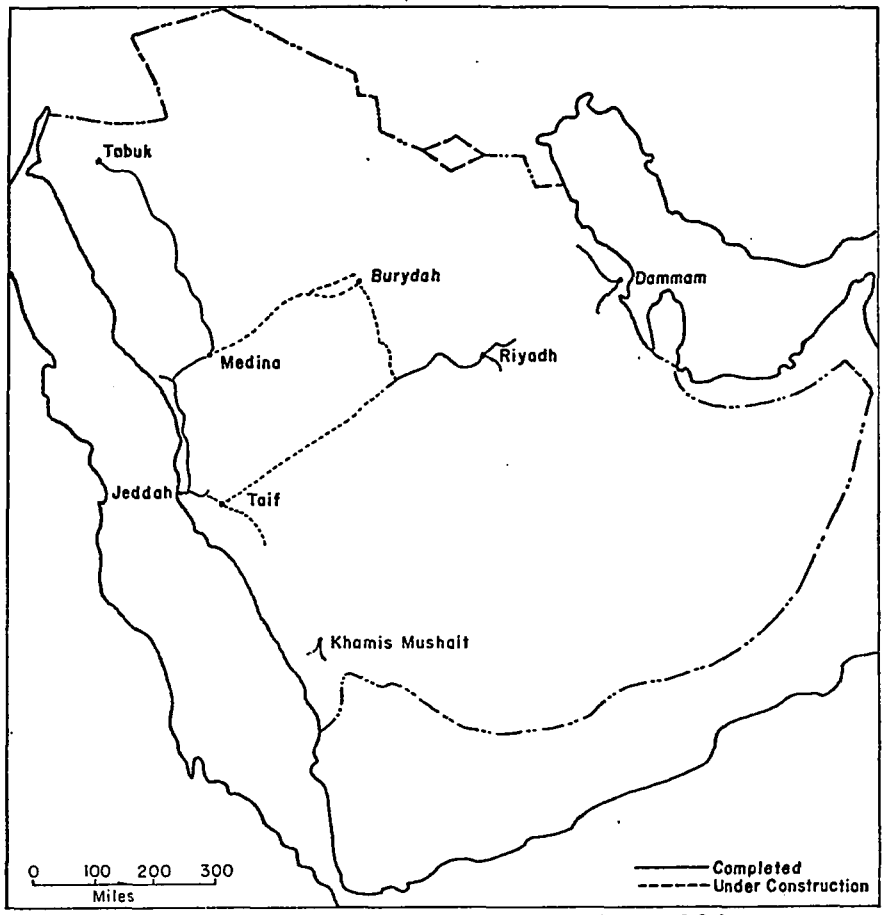


FIGURE 19. SAUDI ARABIA-ROAD NETWORK, 1964.

TABLE 5

GENERAL SUMMARY OF ROAD DEVELOPMENT PROGRAMS, 1964 TO 1973
(Kilometers)

Month and Year	Total Length of Roads Asphalted and Opened to Traffic	Total of Roads on Which Construction Had Started	Total of Roads Completed in Respect to Design
December, 1964	---	810	1,540
October, 1965	---	1,646	2,779
November, 1966	485	2,525	3,958
October, 1967	1,265	3,084	4,608
November, 1968	2,309	4,206	5,557
December, 1969	3,142	4,102	7,414
December, 1970	3,569	4,446	7,881
August, 1971	4,096	4,453	9,089
August, 1972	4,356	5,433	9,302
July, 1973	4,663	6,382	9,467

SOURCE: Adapted from Kingdom of Saudi Arabia, Ministry of Communication, Statistical Yearbook, 1973 (Riyadh, Central Department of Statistics), p. 255.

Figure 20 shows the progress of construction up to 1969. From examining the map, we can see that a major effort was being made to connect even remote areas with the unified highway system. In the early 1970's a 156 kilometer road was completed connecting Saudi Arabia with the neighboring state of Qatar. This international connection was intended to facilitate commerce between the two states.

The 1974 map (Figure 21) shows the trend to extend road connections to still other neighboring states. A proposed road between Jizan in Saudi Arabia and Hodeida in the Yemen Arab Republic is now being designed. Other roads in the planning stage are links with Abu Dhabi and Ras al Khaimah, members of the United Arab Emirates, and with the Buraimi Oasis, a disputed area on the eastern border of the country.

The primary function of the feeder road system is to provide remote outlying villages with safe and efficient access to the new primary highways, thus linking them to the principal areas of the Kingdom. A unified road system, incorporating minor as well as major roads, is imperative in view of the effect of local climatic conditions on perishable farm products. It will provide farmers in the villages with ready access to major urban markets, such as Mecca, Jeddah, and Taif, as well as to hospitals, clinics, schools and other

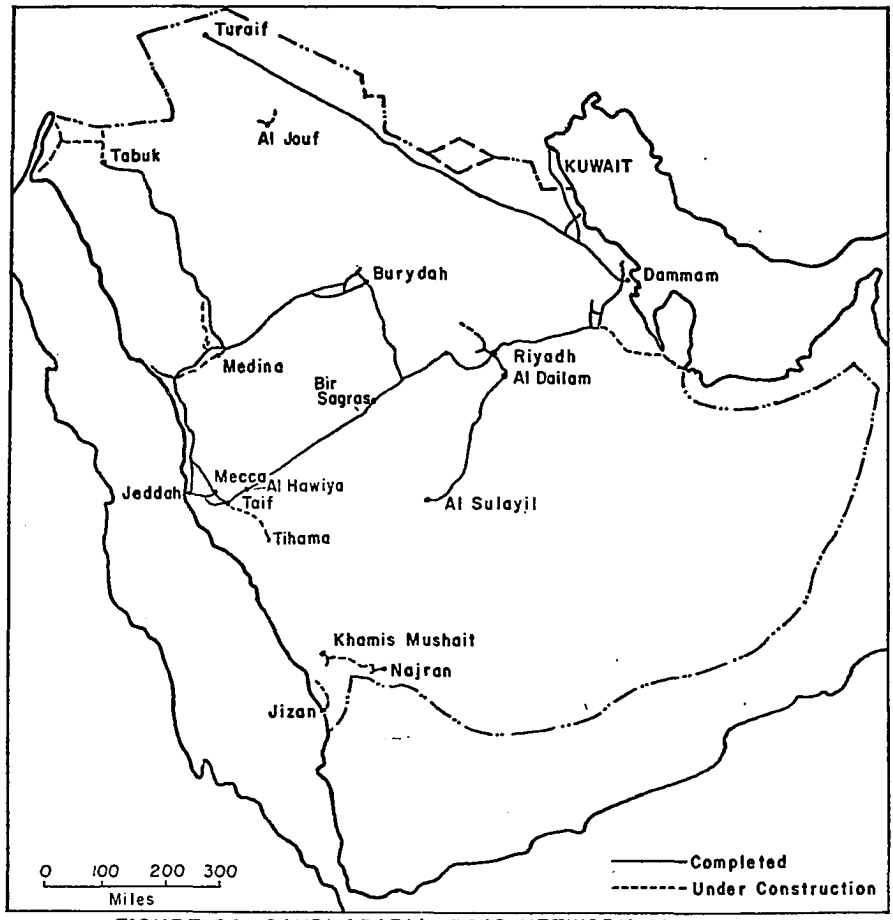


FIGURE 20. SAUDI ARABIA—ROAD NETWORK, 1969.

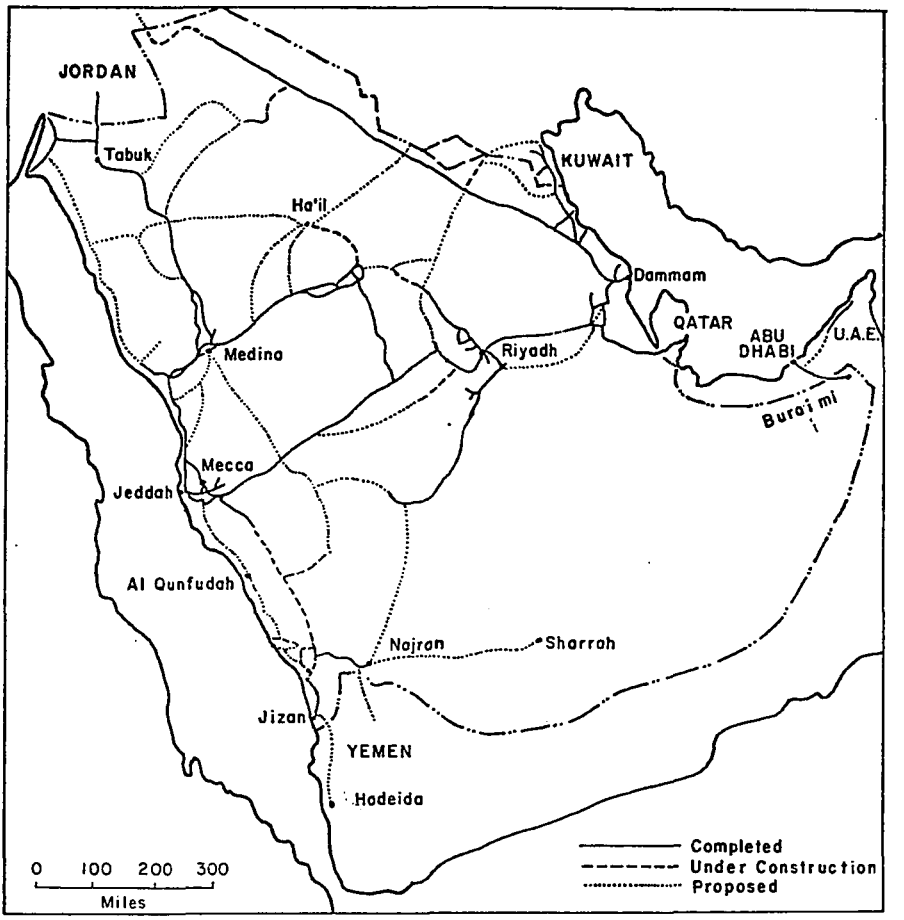


FIGURE 21. SAUDI ARABIA–ROAD NETWORK, 1973.

government facilities established in smaller places.[9] So far, agricultural roads have been constructed mainly in the Abha region of Asir, an area with relatively good soil and substantial rainfall. Overall, the length of agricultural roads almost doubled in four years, from 2,316 kilometers in 1968 to 4,601 kilometers in 1972.[10] While the Jeddah region showed the most kilometers in farm roads completed by the end of the period (1,624 kilometers), the most spectacular improvement percentagewise came in the Riyadh region which saw them extended from only nine kilometers in 1968 to 126 kilometers in 1972.

Table 6 shows the amount of government appropriations for transport and communications during the period 1963-64 to 1973-74. The Ministry of Communication's Five-Year Plan for 1970-75 provided for the further development of transportation routes. The plan called for a total net length of 11,300 kilometers of main and secondary paved roads by 1975, including 900 kilometers of feeder roads and 200 kilometers of new rural roads to be added to the existing 2,800

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[9]Kingdom of Saudi Arabia, Ministry of Information, Feeder Road System Engineering Report (Riyadh, September, 1971), p. 1.

[10]Kingdom of Saudi Arabia, Ministry of Communication, Statistical Yearbook, 1973 (Riyadh, Central Department of Statistics), p. 269.

TABLE 6

GOVERNMENT APPROPRIATIONS IN SAUDI ARABIA FOR TRANSPORT AND COMMUNICATIONS, 1963/64 TO 1973/74 (MILLIONS OF SAUDI RIYALS)

	63/64	64/65	65/66	66/67	67/68	68/69	69/70	70/71	71/72	72/73	73/74
The Ministry of Communications (for administration)	4.2	5.1	2.3	2.2	1.9	2.0	2.0	2.0	2.3	2.9	3.1
Postal, Telephone and Telegraph Services	78.4	122.5	79.0	78.6	74.9	145.7	160.5	142.0	380.6	329.2	466.1
Railways	36.4	38.0	31.8	49.1	35.3	38.7	40.8	40.8	41.1	55.1	73.8
Roads, Bridges and Ports	149.0	370.4	359.1	474.1	473.9	647.2	539.0	489.0	1099.7	1072.1	1813.3
Civil Aviation, Saudi Airlines, and Meterological Department	146.7	178.4	193.7	302.0	318.6	365.9	369.5	352.0	470.4	653.7	939.8
TOTAL	414.7	714.4	665.9	906.0	904.6	1199.5	1111.8	1025.8	1994.1	2113.0	3296.1

SOURCE: Adapted from Kingdom of Saudi Arabia, Ministry of Communications, Statistical Yearbook, 1973 (Riyadh, Central Department of Statistics), p. 251.

kilometers. The plan provided for studies of possible feeder roads to connect all the villages lying within 50 kilometers on either side of the existing or proposed main roads.

From the writer's own experience in Saudi Arabia, it is evident that the poor road system has denied a commercial market to many of the farmers. During the summer season the produce from a given oasis was often so abundant that the local inhabitants could not consume all of it and much was simply wasted. With a more extended road system, the farmer can now take his produce across wide distances to such places as Kuwait and Qatar and sell it at profitable prices. Automotive traffic has increased greatly throughout the country, and during the month of the pilgrimages to Mecca and Medina, the congestion on the roads, particularly the road from Jeddah, is impressive even by Western traffic density standards.

Because of the rather centralized nature of the Saudi Arabian government, roads which are relatively far away from the capital have been more difficult to maintain. The hot climate and shifting sands of Saudi Arabia tend to make road maintenance difficult. The creation of decentralized service and maintenance stations has aided somewhat in solving this problem.

The spatial development of the modern road network in

Saudi Arabia has followed an east-west axial pattern which is also the pattern of the socio-economic development. In its overall growth, this modernization program has been closely associated with the discovery of oil, with the increase in oil revenues, and more directly with the growth of the government budget.[11]

The first Saudi Arabian television stations, built under contract with the U.S. Army Corps of Engineers, commenced broadcasting in Riyadh and Jeddah in 1965, and a seventh station was completed in Dammam in 1969.[12] Since 1969, there has been no expansion of local TV program production. The government television system relies heavily on the use of foreign broadcasting, technology, and programs, and its emissions are presently limited to approximately forty-four hours per week at each station. Popular entertainment is its primary function. Some late progress is indicated in the announcement of a government plan for an educational television project in Riyadh.[13] With respect to

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[11]Asaad Abdo, "The Evolution of Modern Roads in Saudi Arabia," Bulletin de la Société de Géographie d'Egypte, Vol. 41 (1972), p. 40.

[12]Kingdom of Saudi Arabia, Ministry of Information, Television Development Plan (N.p., September 28, 1973), p. 1.

[13]Kingdom of Saudi Arabia, Ministry of Education, Feasibility Study and Operational Plan for the Implementation of a Pilot Educational Television Project in Riyadh, Saudi Arabia, April, 1974.

longer range television planning, the Ministry of Information expects to expand and improve the TV broadcasting networks so as to provide service throughout the Kingdom and neighboring nations. It has undertaken, with French technical assistance, the training of personnel in the art and the science of television production and broadcasting.

Modern communication systems have been slow to develop in Saudi Arabia. A rather haphazard postal system dependent on messengers has been characteristic of the country, particularly outside the major urban centers, but a centralized mail service has now been established. Local telephone systems have been in operation in Jeddah, Dhahran, and other urban centers for several decades, but linkages between them have been dependent on radio microwave and high frequency relay systems. Larger cables, automatic switchboards, and satellite communication facilities are additions of recent years. International calls now function smoothly, with minimal delays, and the number of new telephone connections in private homes, offices, and commercial establishments is multiplying at an impressive rate. By early 1977 the waiting period for a telephone installation had been shortened to a week, and the government hopes to reduce the waiting period to one day by sometime in the 1980's.

Agriculture

The development of agricultural cooperative societies in Saudi Arabia, with a view to assisting farmers in purchasing needed supplies, improving agricultural techniques, and marketing produce, started in 1960 with the establishment of a multipurpose cooperative society in Deriya (Riyadh area).[14] As of 1965, about twenty cooperatives were registered, seven of them purely agricultural and the others more general consumer and multipurpose cooperatives. A number of other cooperatives have been established, including some thirty school cooperatives. "Farm people and cooperative leaders have now started to understand the important contribution cooperatives can make in solving their problems and are eager to expand the activity of their cooperatives."[15] Obstacles to the development of cooperatives have included the lack of official understanding of farmers' technical problems, the lack of established management methods that meet the needs of members, and the need for closer cooperation between various administrative officers and agricultural workers.

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[14]Basil G. Moussoures, The Development of Agricultural Cooperative Societies in Saudi Arabia (Riyadh: The Ford Foundation, August 7, 1965).

[15]Ibid., p. 5.

Industry

Manufacturing in Saudi Arabia, because of the limited range of developed resources, the near total dependence on foreign countries for steel and machinery, and the severe local shortage of many technical skills, has been of minor importance apart from the huge Aramco oil refining operations Oil production refining is considered in this study not so much as a spatial activity to be analyzed as a major and expanding source of revenue on which most other development activity depends. Commerce in Saudi Arabia has traditionally been limited to a fairly narrow range of consumer goods, some of local origin and others coming in from foreign areas through Jeddah and smaller seaports. With rising incomes, the range of available consumer goods has increased in striking fashion. Some of the imports in the luxury and semi-luxury class arrive by air freight.

In the early 1960's, commercial and industrial activity in Saudi Arabia could be separated into three categories. The first type of activity centered on the importation and distribution of foreign materials and products. The maintenance and servicing of these imports was a related aspect of this activity. Electric generating and transmission equipment, government development in such projects as match manufacturing and dairy and poultry production, might also be

included in this category since they too were virtual "foreign imports." Second, the urbanization related to the growth of the petroleum industry gave rise to a large number of small enterprises providing construction materials for the expanding cities, consumer goods for their populations, and, of course, equipment for the oil fields. Products of these firms included such varied items as cement blocks and window assemblies, soft drinks and candy, and bottled oxygen and acetylene gas. Finally, there appeared in the 1960's a few much larger industrial enterprises: cement and soap factories in Jeddah, a cement factory and flour mill in Riyadh, and plants in other centers producing macaroni, leather goods, and automobile tires.[16]

These early steps toward industrialization produced a steady increase in the number of "establishments" engaged in manufacturing and commerce, but they also produced many problems. For instance, in the soft-drink field the first firms enjoyed sizable profits, but the large number of new firms which then entered the field soon produced an output which far exceeded the demand. Similarly, a temporary slacking off of construction activity proved the ruin of many

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[16]Erwin S. Penn, Economic Report of Industrial Sector of Saudi Arabia (Riyadh: Ministry of Commerce and Industry, 1965)

small firms which had rushed in to profit from the building boom. Even the larger industrial ventures showed a distressingly similar pattern of high initial output followed by alarming declines. Sometimes these declines were due to technical and operational problems within the plants, but in other cases to complex external factors.

In general, the early phase of industrialization showed a strong and driving entrepreneurial spirit, but it also demonstrated a desperate, often disastrous lack of training, planning, and direction. Many Saudi businessmen are obviously vigorous and venturesome, eager to join the industrialized world yet still heavily if not totally dependent on foreign technicians and technology in their drive for success.

The key to long-range economic development has been viewed as diversification. Oil, of course, is by far the dominant immediate support for economic expansion in Saudi Arabia. With rising petroleum prices and a growing world demand, rapid economic growth for the remainder of the twentieth century seems assured. The Saudi government, however, as mentioned in Chapter IV, feels that it is increasingly important to diversify the pattern of exports in order to provide more permanent sources of revenue.

According to the Second Development Plan, which is to

cover the period from 1975 to 1980, the overall economic development strategy will stress diversification of the economic base through emphasis on increasing agricultural and miscellaneous industrial production.[17] The Ministry of Commerce and Industry is particularly concerned with the development of the industrial sector of the economy. Of special importance has been the establishment of private power companies for the purpose of meeting the electricity requirements of small towns and villages. The Ministry published a report in the early 1970's showing that, in addition to the major cities, thirty small towns in various parts of the Kingdom were being supplied with electricity either from local private or government projects or from the distribution network of larger power companies in nearby cities.[18] Of special importance to industrial development is the government agency known as the Industrial Studies and Development Center. It conducts industrial research and guides the formulation of industrial policies as well as providing technical assistance to various industries. Figures

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[17]Kingdom of Saudi Arabia, Ministry of Planning, Second Development Plan: 1975-1980, 1975, p. 58.

[18]Saudi Arabian Monetary Agency, Annual Report: 1971-72, Kingdom of Saudi Arabia, 1972, p. 58.

22 and 23 show the number of establishments in the various regions of Saudi Arabia at the beginning and end of the period 1964-1973. There is a clearly rising number of industrial establishments in eight important categories ranging from the production of food to the manufacturing of items related to transportation.

All development planning in Saudi Arabia is based on the assumption of rapidly rising government revenues. The analysis of development in this study is largely confined to the ten-year period 1964-1973, but it should be noted that marked increases in world oil prices have occurred in the post-1973 years, and that Saudi Arabia's share of the world oil market has been increasing. Table 7 shows annual revenues of the Saudi Arabian government from various sources (in millions of Saudi riyals) and the budget allocations to the various ministries and other official agencies included in the government's economic development plans. Table 8 shows the gross national product at factor cost for the period 1962-1971. Later data of a comparable type seems not to be available. Table 9 shows a more detailed breakdown of estimated revenue receipts by major categories for the period 1963/64 to 1972/73.

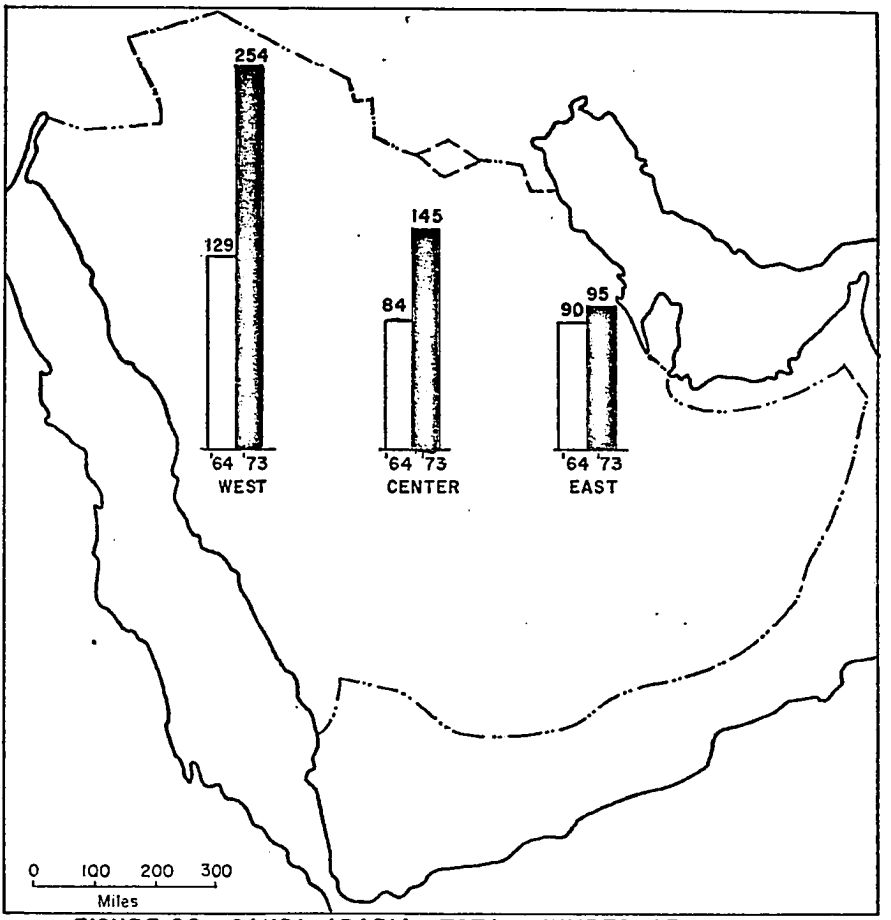

FIGURE 22. SAUDI ARABIA—TOTAL NUMBER OF LICENSED MANUFACTURING FIRMS, 1964 AND 1973.

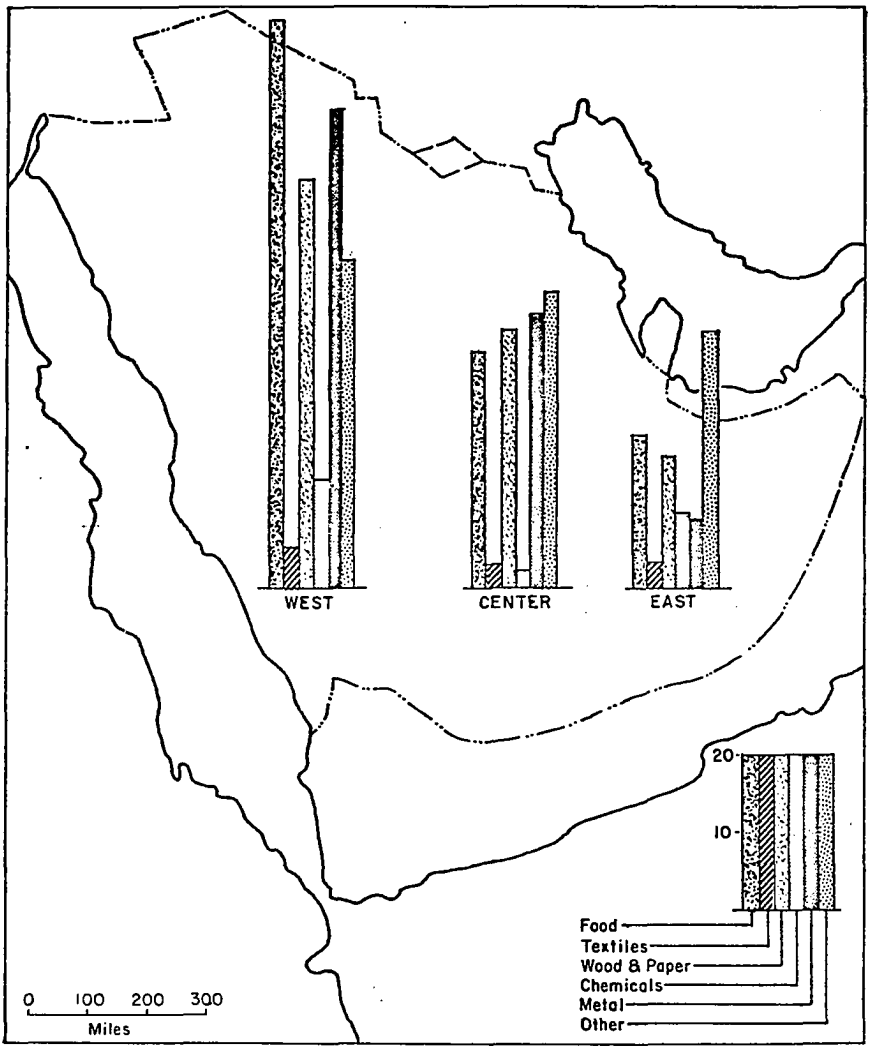

FIGURE 23. SAUDI ARABIA–NUMBER OF LICENSED MANUFACTURING FIRMS BY TYPE, 1973.

TABLE 7

ANNUAL BUDGET ESTIMATES
AND THE ALLOCATION FOR EACH MINISTRY

(Million Riyals)

	1963 (1383/84)		1964 (1384/85)		Oct. 26, 1965 (1385/86)		Oct. 15, 1966 (1386/87)	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Revenues								
Oil Royalties					954	24.1	1,161	23.1
Income Tax					2,225	56.2	2,826	56.2
Customs Duties					165	4.1	175	3.5
Others					617	15.6	863	17.2
Total	2,680.6		3,112.0		3,961	100.0	5,025	100.0
Expenditures								
Private Treasury					173	4.4	173	3.4
Royal Cabinet					8	0.2	8	0.2
Council of Ministers					19	0.5	19	0.4
Ministry of Defence and National Guards					572	14.4	1,163	23.1
Ministry of Foreign Affairs					51	1.3	56	1.1
Ministry of Labour and Social Affairs					78	2.0	87	1.7
Ministry of Interior					345	8.7	370	7.4
Ministry of Education and Schools					360	9.1	399	7.9
Ministry of Communications					103	2.6	119	2.4
Ministry of Agriculture					84	2.1	88	1.8
Ministry of Finance and National Economy					57	1.4	62	1.2
Ministry of Petroleum and Mineral Resources					14	0.3	17	0.3
Ministry of Health					128	3.2	154	2.7
Ministry of Commerce and Industry					12	0.3	15	0.3

TABLE 7 (Continued)

	1963 (1383/84)		1964 (1384/85)		Oct. 26, 1965 (1385/86)		Oct. 15, 1966 (1386/87)	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Ministry of Pilgrimages and Charity					39	1.0	42	0.8
Ministry of Justice (Judiciaries)					31	0.8	33	0.7
Ministry of Information					35	0.9	39	0.8
Religious Organisations, Muezzins, etc.					42	1.1	48	1.0
Civil Defence					31	0.8	31	0.6
Emergency Expenses					44	1.1	46	0.9
Projects					1,402	35.4	1,717	34.2
Other Expenditures (1)					313	7.9	339	6.7
Cost increase & subsidies due to devaluation of Riyal					20	0.5	20	0.4
Total					3,961	100.0	5,025	100.0

(1) This figure includes: Riyadh Electricity, Public Allocations, Government Pensions, Central Planning Organization, Grievances, Intelligence Department, Comptroller General, Showra, Grants to Public Organizations, Public Works, Hajj Hospitality Expenditures, and aid to sister Arab countries.

TABLE 7 (Continued)

	Oct. 5, 1967 (1387/88)		Sept. 23, 1968 (1388/89)		Sept. 1, 1970 (1390/91)		Aug. 22, 1971 (1391/92)	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Revenues								
Oil Royalties	1,127	22.8	1,177	21.2	1,573	24.7	2,227	20.6
Income Tax	2,433	49.3	3,065	55.4	3,963	62.1	7,728	71.7
Customs Duties	192	3.9	243	4.4	292	4.6	314	2.9
Others	1,185	24.0	1,050	19.0	552	8.6	513	4.8
Total	4,937	100.0	5,535	100.0	6,380	100.0	10,782	100.0
Expenditures								
Private Treasury	173	3.5	173	2.9	173	2.6	173	1.6
Royal Cabinet	15	0.3	13	0.2	15	0.2	17	0.1
Council of Ministers	17	0.3	19	0.3	19	0.3	25	0.2
Ministry of Defence and National Guards	723	14.6	841	14.3	925	14.1	1,138	10.6
Ministry of Foreign Affairs	52	1.1	65	1.1	57	0.9	70	0.6
Ministry of Labour and Social Affairs	84	1.7	92	1.6	98	1.5	125	1.2
Ministry of Interior	406	8.2	528	9.0	589	9.0	850	7.9
Ministry of Education and Schools	383	7.8	446	7.6	646	9.9	1,031	9.6
Ministry of Communications	98	2.0	111	1.9	109	1.7	149	1.4
Ministry of Agriculture	80	2.0	89	1.5	82	1.3	113	1.0
Ministry of Finance and National Economy	58	1.2	71	1.2	69	1.1	105	1.0
Ministry of Petroleum and Mineral Resources	16	0.3	19	0.3	19	0.3	26	0.2
Ministry of Health	122	2.5	156	2.7	166	2.5	250	2.3
Ministry of Commerce and Industry	13	0.3	16	0.3	15	0.2	21	0.2

TABLE 7 (Continued)

	Oct. 5, 1967 (1387/88)		Sept. 23, 1968 (1388/89)		Sept. 1, 1970 (1390/91)		Aug. 22, 1971 (1391/92)	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Ministry of Pilgramages and Charity	43	0.9	44	0.8	44	0.7	60	0.6
Ministry of Justice (Judiciaries)	32	0.6	36	0.6	37	0.6	51	0.5
Ministry of Information	35	0.7	49	0.8	48	0.7	69	0.6
Religious Organisations, Muezzins, etc.	48	1.0	61	1.0	25	0.4	32	0.3
Civil Defence	20	0.4	30	0.5	20	0.3	--	---
Emergency Expenses	31	0.6	40	0.7	41	0.6	60	0.6
Projects	2,146	43.5	2,570	43.7	2,596	39.7	5,036	46.7
Other Expenditures (1)	322	6.5	396	6.7	749	11.4	1,131	10.5
Cost increase & subsidies due to devaluation of Riyal	20	0.4	20	0.3	--	---	250	2.3
Total	4,937	100.0	5,885	100.0	6,542	100.0	10,782	100.0

TABLE 7 (Continued)

	Aug. 12, 1972 (1392/93)		July 30, 1973 (1393/94)	
	Amount	Per Cent	Amount	Per Cent
Revenues				
Oil Royalties	2,529	19.2	5,336	23.4
Income Tax	9,674	73.3	15,930	69.8
Customs Duties	315	2.4	330	1.5
Others	682	5.1	1,214	5.3
Total	13,200	100.0	22,810	100.0
Expenditures				
Private Treasury	173	1.3	173	0.7
Royal Cabinet	18	0.1	20	0.1
Council of Ministers	29	0.2	33	0.1
Ministry of Defence and National Guards	1,427	10.4	1,711	7.5
Ministry of Foreign Affairs	80	0.6	94	0.4
Ministry of Labour and Social Affairs	144	1.1	198	0.9
Ministry of Interior	1,071	7.8	1,267	5.5
Ministry of Education and Schools	1,300	9.5	1,677	7.4
Ministry of Communications	189	1.4	231	1.0
Ministry of Agriculture	136	1.0	177	0.8
Ministry of Finance and National Economy	104	0.8	120	0.5
Ministry of Petroleum and Mineral Resources	31	0.2	39	0.2
Ministry of Health	375	2.7	499	2.2
Ministry of Commerce and Industry	40	0.3	45	0.2

TABLE 7 (Continued)

	Aug. 12, 1972 (1392/93)		July 30, 1973 (1393/94)	
	Amount	Per Cent	Amount	Per Cent
Ministry of Pilgramages and Charity	74	0.5	85	0.4
Ministry of Justice (Judiciaries)	53	0.4	57	0.3
Ministry of Information	83	0.6	92	0.4
Religious Organisations, Muezzins, etc.	35	0.3	38	0.2
Civil Defence	--	---	--	---
Emergency Expenses	61	0.4	201	0.9
Projects	6,718	49.2	14,263	62.5
Other Expenditures (1)	1,227	9.0	1,338	5.9
Cost increase & subsidies due to devaluation of Riyal	300	2.2	452	2.0
Total	13,668	100.0	22,810	100.0

SOURCE: Saudi Arabian Monetary Agency, Kingdom of Saudi Arabia, Annual Report 1392-93 A. H., 1972-73, pp. 88-89.

TABLE 8

GROSS NATIONAL PRODUCT AT FACTOR COST, 1962/63 TO 1970/71
(MILLIONS OF RIYALS)

	1962/63	1963/64	1964/65	1965/66	1966/67
Gross Domestic Product at Factor Cost	8,603.7	9,205.2	10,257.5	11,755.6	13,078.6
Less: Net Factor Income Payments to the rest of the world	2,119.0	1,948.0	2,200.0	2,839.0	2,961.0
Gross National Product	6,484.7	7,257.2	8,057.5	8,936.6	10,117.6
Less: Depreciation	648.5	725.7	805.8	893.7	1,011.8
National Income	5,836.2	6,531.5	7,251.7	8,042.9	9,105.8

	1967/68	1968/69	1969/70*	1970/71*
Gross Domestic Product at Factor Cost	14,458.1	15,660.7	17,371.1	21,276.3
Less: Net Factor Income Payments to the rest of the world	3,204.0	3,390.3	3,961.0	5,346.6
Gross National Product	11,254.1	12,270.4	13,410.1	15,929.7
Less: Depreciation	1,125.4	1,227.0	1,341.0	1,593.0
National Income	10,128.7	11,043.4	12,069.1	14,336.7

SOURCES: 1962/63 to 1967/68: Central Department of Statistics, The Gross Domestic Product of Saudi Arabia, 1382/83-1388/89 (1962/63 to 1967/68), p. 2. 1968/69 to 1970/71: Saudi Arabian Monetary Agency, Annual Report, 1390/91 A.H. (1971), p. 104.

*Provisional Estimates.

TABLE 9

ESTIMATED REVENUE RECEIPTS OF THE KINGDOM OF SAUDI ARABIA BY MAJOR CATEGORIES, 1963/64 TO 1972/73 (MILLIONS OF SAUDI RIYALS)

	Type of Revenue	1963/64	1964/65	1965/66	1966/67	1967/68
I.	Oil Sector Revenues	2,267.9	2,571.8	3,144.2	3,944.1	3,515.4
	A. Royalties	721.4	813.4	954.4	1,160.7	1,126.6
	B. Income Tax	1,528.0	1,756.6	2,186.5	2,783.4	2,388.8
	C. Tapline	18.5	1.8	3.3	---	---
II.	Tax Revenues	221.3	236.7	273.1	308.0	330.4
	A. Direct Taxes	58.0	59.5	62.0	76.7	81.0
	B. Indirect Taxes	154.2	165.0	198.5	214.5	232.5
	C. Fees and Licenses	9.1	12.2	12.6	16.8	16.9
III.	Non-Tax Revenues	109.3	121.7	168.0	186.3	211.0
IV.	Other Revenues, n.e.c.	12.2	18.4	15.5	15.8	10.9
V.	Total Current Revenues	2,610.7	2,948.6	3,600.3	4,454.2	4,067.7
VI.	Additional Receipts	17.3	15.5	15.7	1.6	1.5
VII.	Total Receipts	2,628.0	2,964.1	3,616.0	4,453.8	4,069.2
VIII.	Estimation Error (+ or -)	-2.0	-2.1	-2.4	-3.8	-3.8
IX.	Other Sources of Budget Finance	60.0	150.0	347.4	575.0	871.6
X.	Total Sources of Finance	2,686.0	3,112.0	3,961.0	5,025.0	4,937.0

TABLE 9--Continued

	Type of Revenue	1968/69	1969/70	1970/71	1971/72	1972/73
I.	Oil Sector Revenues	4,198.3	5,197.8	5,440.0		
	A. Royalties	1,177.0	1,738.5	1,573.0		
	B. Income Tax	3,018.8	3,459.3	3,863.5		
	C. Tapline	2.5	---	3.5		
II.	Tax Revenues	392.4	434.3	599.8		
	A. Direct Taxes	88.1	110.4	147.5		
	B. Indirect Taxes	285.7	302.4	422.5		
	C. Fees and Licenses	18.6	21.5	29.8		
III.	Non-Tax Revenues	297.5	318.2	270.6		
IV.	Other Revenues, n.e.c.	11.3	19.5	11.5		
V.	Total Current Revenues	4,899.5	5,959.8	6,321.9		
VI.	Additional Receipts	1.5	1.5	3.4		
VII.	Total Receipts	4,901.0	5,961.3	6,325.3		
VIII.	Estimation Error (+ or -)	-1.2	+4.7	+0.3		
IX.	Other Sources of Budget Finance	635.5	---	---		
X.	Total Sources of Finance	5,535.5	5,966.0	6,380.3*	10,782.0	13,200.0

SOURCE: 1963/64-1972/73: Central Department of Statistics, Statistical Yearbook, No. 6, 1970, p. 380. 1970/71: Central Department of Statistics, Statistical Yearbook, No. 7, 1971, p. 340.

*The final total contains S.R. 55.0 million collected for a special jihad tax levied to meet obligations arising out of the Arab-Israeli conflict.

Chapter VI

THE MYRDAL MODEL IN RELATION TO REGIONAL GROWTH TRENDS
A COMPARISON OF TRENDS WITH EXPECTATIONS FROM THE MYRDAL MODEL

According to the Myrdal development model, one would expect the five Saudi Arabian regions used in the present study to diverge with respect to the twelve economic and social variables specifically selected for study. The assumption of the model, it will be recalled, is that as development proceeds some region or regions will grow at the expense of other regions--i.e., the central growth pole(s) will become richer at the expense of outlying areas. The Myrdal model was tested by examining regional trends in terms of the variables. Toward this end, data for the five regions in regard to the twelve variables were assembled, insofar as they were available, and converted to per capita form. The regional data are shown in graphic form in this chapter, with further details in Appendix A, p. 263. The raw data are portrayed in time graphs in Figures 24 through 35. The same data were reduced to per capita form as shown in Figures 36 through 47. The graphs were then analyzed with a view to recognizing significant trends over the ten-year period 1964-1973 among the five regions and the twelve variables.

Because the graphs can show only general trends, a somewhat more analytical approach was employed in applying to the data an analysis of variance (ANOVA) and the Williamson index of regional inequality. For each variable and each region, the yearly per capita gains or losses were averaged over the ten-year period to show a mean gain or loss. The means were then subjected to ANOVA procedures to determine if there were significant differences among the five regions over the ten-year period. The results are shown in Table 10. Finally, the Williamson index of regional inequality was applied to the per capita data concerning those variables with supporting data available for the full period of the study. The results give a measure of change in regional inequality over the ten-year period.

REGIONAL TRENDS

The first of the twelve variables to be examined was labor employed in the country as a whole and within the five study regions (Figures 24 and 36). Since most of the employment is in the private sector and reports concerning it are remarkably incomplete, the use of this variable is limited. Data was reported for individual cities for the years 1964 to 1968, permitting a grouping into the five study regions, but for the years beginning with 1969, other

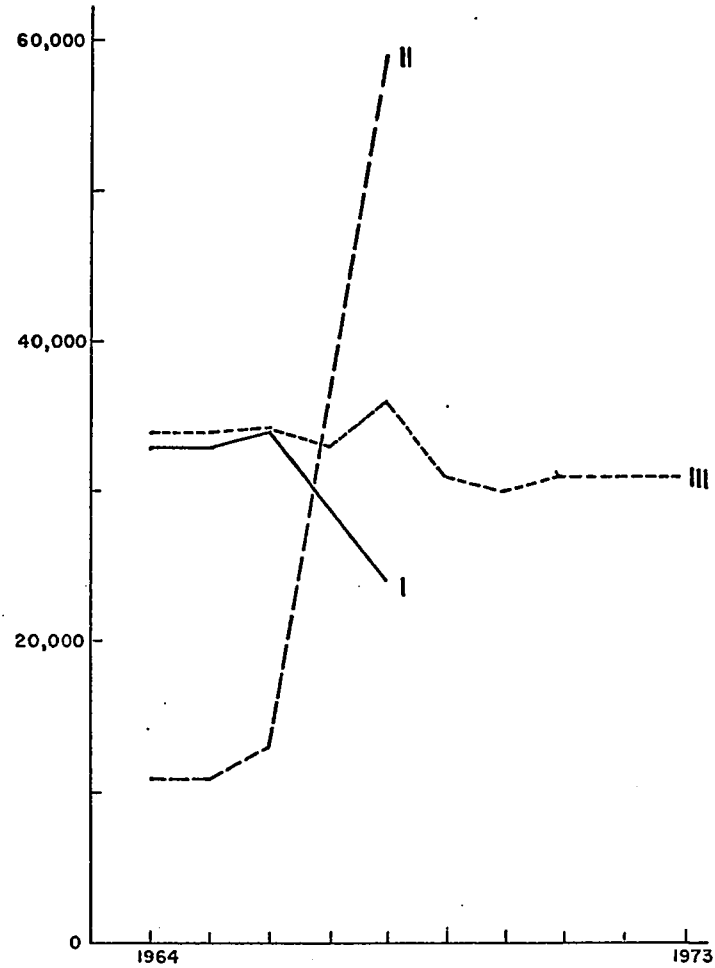

FIGURE 24. SAUDI ARABIA—NUMBER OF WORKERS EMPLOYED BY REGION, 1964–1973. *(COMPLETE DATA UNAVAILABLE)*

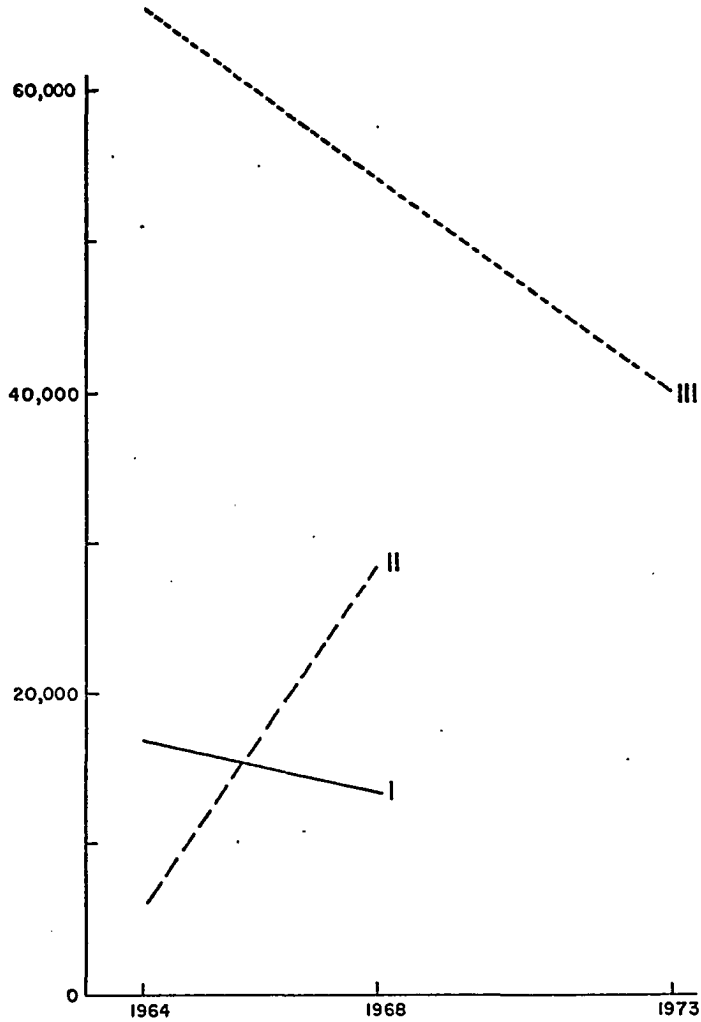

FIGURE 36. SAUDI ARABIA—NUMBER OF WORKERS EMPLOYED PER MILLION POPULATION BY REGION, 1964, 1968, AND 1973. *(COMPLETE DATA UNAVAILABLE)*.

than for Region III, the East, employment data is lacking. From both general sources and the writer's personal observation, it is evident that the labor supply, including unskilled and semi-skilled workers from nearby regions and technical workers from developed countries, has been expanding rapidly. No explanation can be offered for the apparent dropoff in the labor force in Region I (Center) in the 1966-1968 period, but it seems evident that a marked upturn occurred later. The essentially flat nature of the labor trend in Region III seems to relate to the increasing mechanization of oil field operations in that area.

Figures 25 and 37 reflect the changes in number of establishments over the decade for all five of the study regions. The specific number of establishments by region is reported in Appendix A. Included in the data are all the commercial and industrial establishments licensed by the Chamber of Commerce within the Ministry of Commerce.

As the graphs indicate, Regions III, IV, and V show declines in the number of establishments, particularly in the early part of the ten-year period, while Regions I and II show a marked gain prior to a longer essentially level period. The number of establishments did not keep pace with population growth during the period as a whole, although this

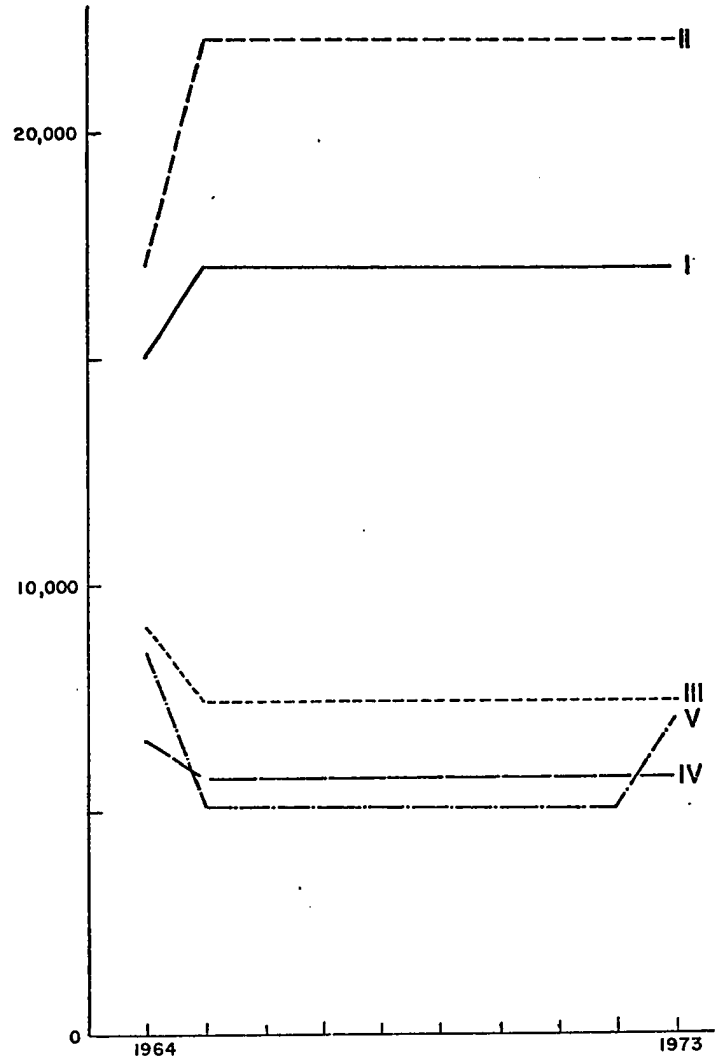

FIGURE 25. SAUDI ARABIA–NUMBER OF ESTABLISHMENTS LICENSED BY CHAMBER OF COMMERCE BY REGION, 1964–1973. *(COMPLETE DATA UNAVAILABLE)*

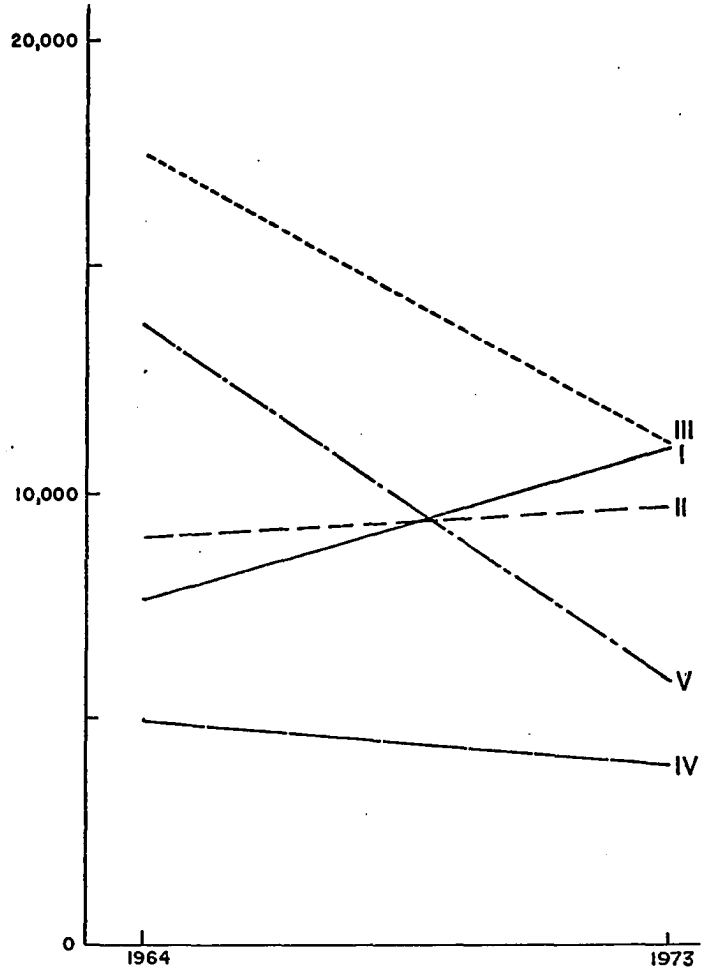

FIGURE 37. SAUDI ARABIA–NUMBER OF ESTABLISHMENTS PER MILLION POPULATION, 1964 AND 1973.

can probably be attributed to growth in the average size and activity of the establishments and the disappearance of many of the small ones. By the end of the period an upturn in the number of establishments is reported for Region V.

The third variable studied is the number of cooperative societies. These societies, some oriented to producers and some to consumers, function primarily but not exclusively in rural areas. They are sponsored and supported by the Ministry of Labor and Social Welfare. Figures 26 and 38 chart the number of cooperative societies in the five regions. Region I, which began the decade with the largest number of societies, 17, also ended with the highest number, 36, serving a region of two million people. Cooperative societies made their appearance in the other four regions in 1965, and additional ones have been created in most subsequent years. After 1969 the rate of establishment of new societies increased, and by the end of the decade there was a total of 408, 37 of them in Region I (Center). The growth in the number of cooperatives is more erratic than that of some other indicators. After an increase from 1966 to 1967, there is an overall plateau between 1969 and 1971, after which an uneven progression began in all except the eastern area (Region III).

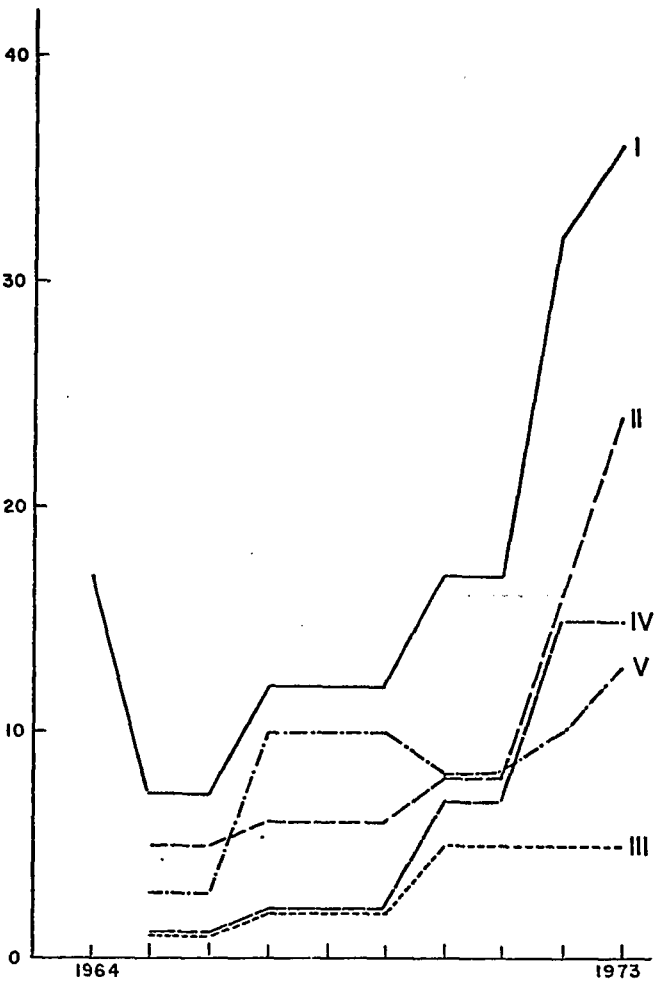

FIGURE 26. SAUDI ARABIA–NUMBER OF COOPERATIVE SOCIETIES BY REGION, 1964–1973.

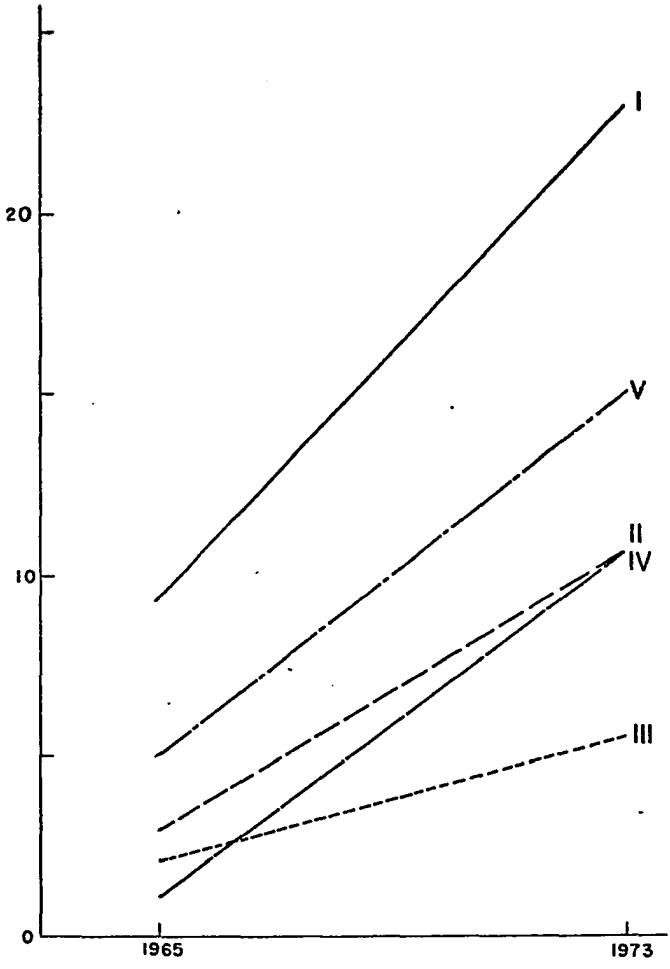

FIGURE 38. SAUDI ARABIA—NUMBER OF COOPERATIVE SOCIETIES PER MILLION POPULATION BY REGION, 1965 AND 1973. *(DATA FOR 1964 UNAVAIABLE)*

After long years of neglect and inadequate resources to bring about substantial changes, the Saudi Arabian government is now giving major attention to mass education at the elementary level and the creation of educational opportunities at intermediate and higher levels. Figures 27 and 39 show the number of schools of all types in the five regions of Saudi Arabia from 1964 to 1973. Appendix B, which presents the statistical details, shows that the number of schools in the entire country approximately tripled during the decade under study. The most striking percentage increase was in Region V, the North, the least populated of the five regions, although it was only slightly less in the very prominent West, Region II, where the number of schools increased from 304 to 1,181. The least percentage growth was in Region III, the East, where much of the oil development activity occurs, but even here the number of schools more than doubled, from 141 in 1964 to 297 in 1973. On a per capita basis, the number of schools appears to be most adequate in the Center (Region I) and least adequate in the North (Region V), although the relative status of the North is improving. Though some of the regions show one-year periods with no increase or even a slight decrease, overall the trend in the number of schools is upward throughout Saudi Arabia from 1964 to 1973.

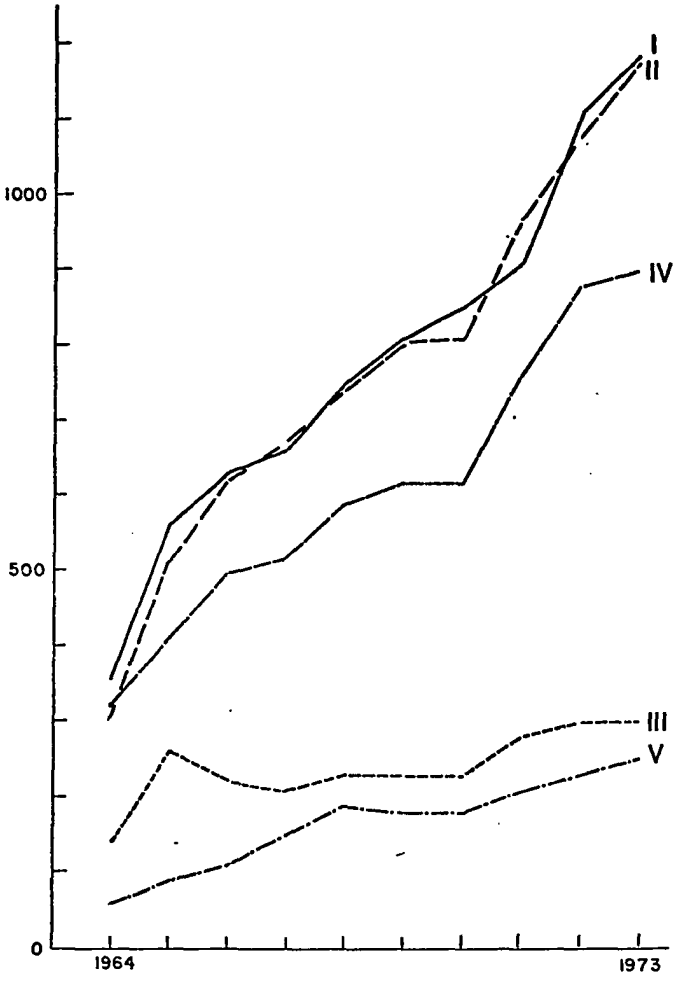

FIGURE 27. SAUDI ARABIA-NUMBER OF SCHOOLS OF ALL TYPES BY REGION, 1964-1973.

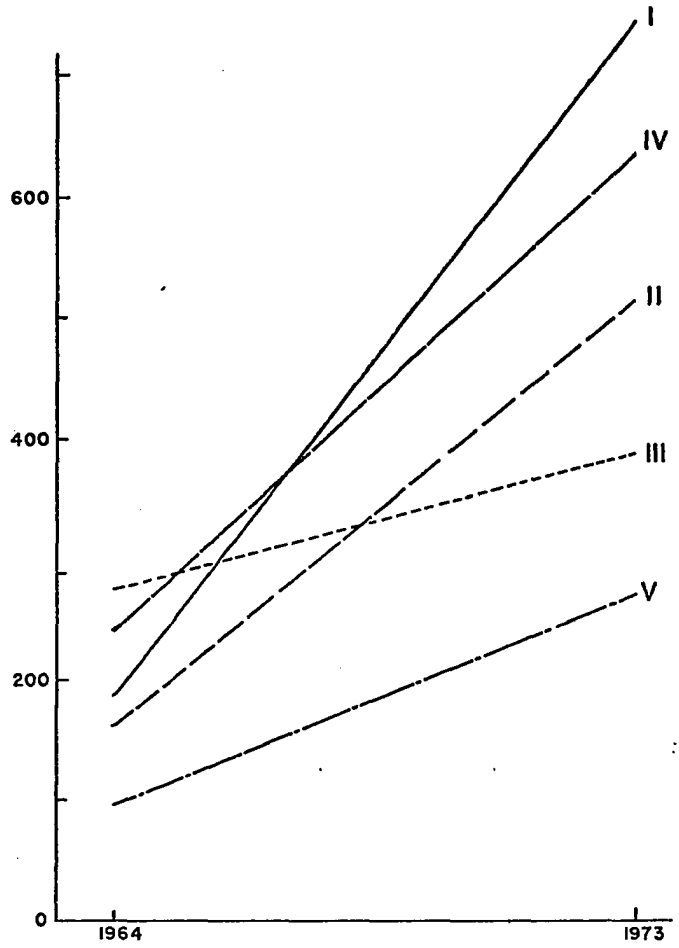

FIGURE 39. SAUDI ARABIA–NUMBER OF SCHOOLS PER MILLION POPULATION BY REGION, 1964 AND 1973.

Closely paralleling the growth in schools in the five regions is the growth in the number of teachers (Figures 28 and 40). Again, Region V began and ended the period with the smallest number of teachers, both absolutely and per capita. Regions I and II, the most populous of the five, showed the greatest number of schools and teachers throughout the decade. The other regions showed comparable rates of growth in the number of both schools and teachers. Overall, the growth rate in number of teachers is steady, with only minor one-year fluctuations.

Figures 29 and 41 chart the number of students in the five regions over the period from 1964 to 1973. With few variations, the graphs reflect the same trends as those shown in Figures 27, 28 and 40, the other indicators of educational development in Saudi Arabia during the period. At the end of the decade, the Western region far outstripped the North in terms of the total number of students and the ratio of students to total population. Educational opportunities are still far from equalized throughout the country, but the more rural North is doing some catching up. Appendix A shows the number of students by region each year throughout the decade.

Another measure of socioeconomic development in Saudi Arabia is the trend in the number of hospitals,

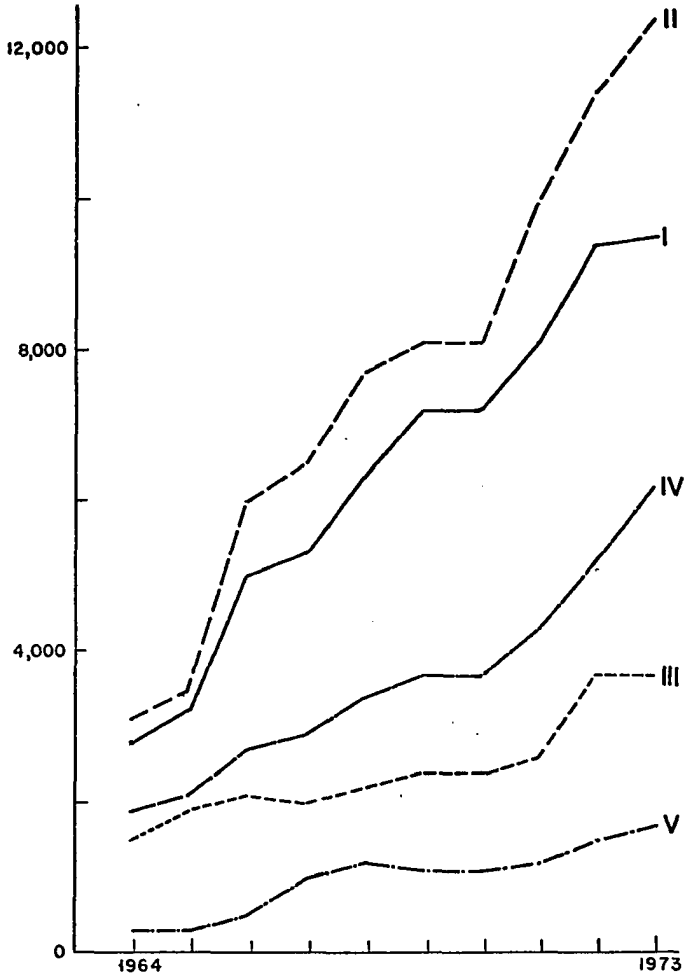

FIGURE 28. SAUDI ARABIA–TOTAL NUMBER OF TEACHERS BY REGION, 1964-1973.

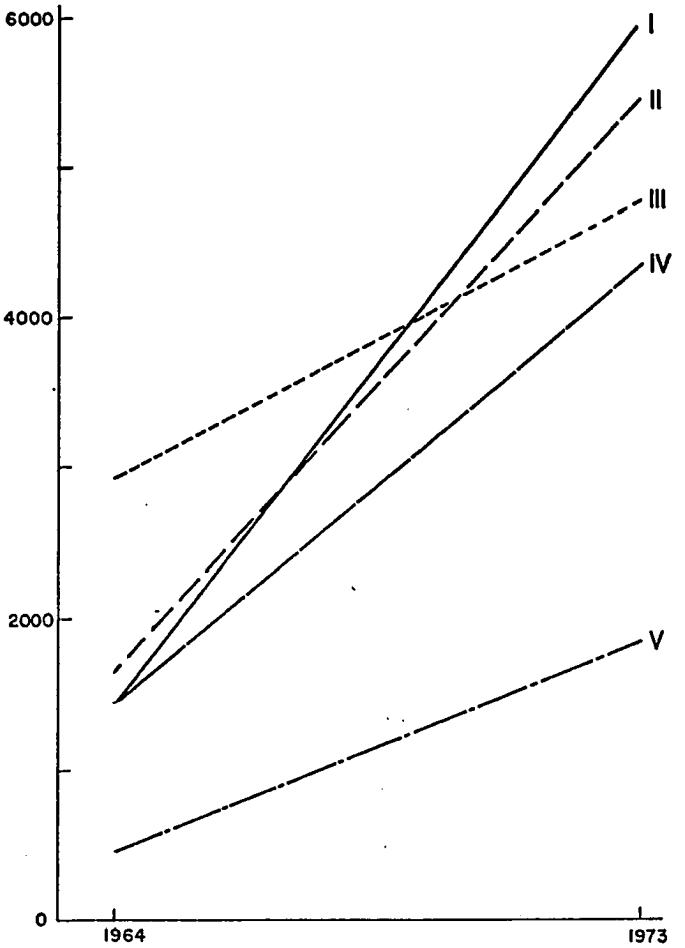

FIGURE 40. SAUDI ARABIA-NUMBER OF TEACHERS PER MILLION POPULATION BY REGION, 1964 AND 1973.

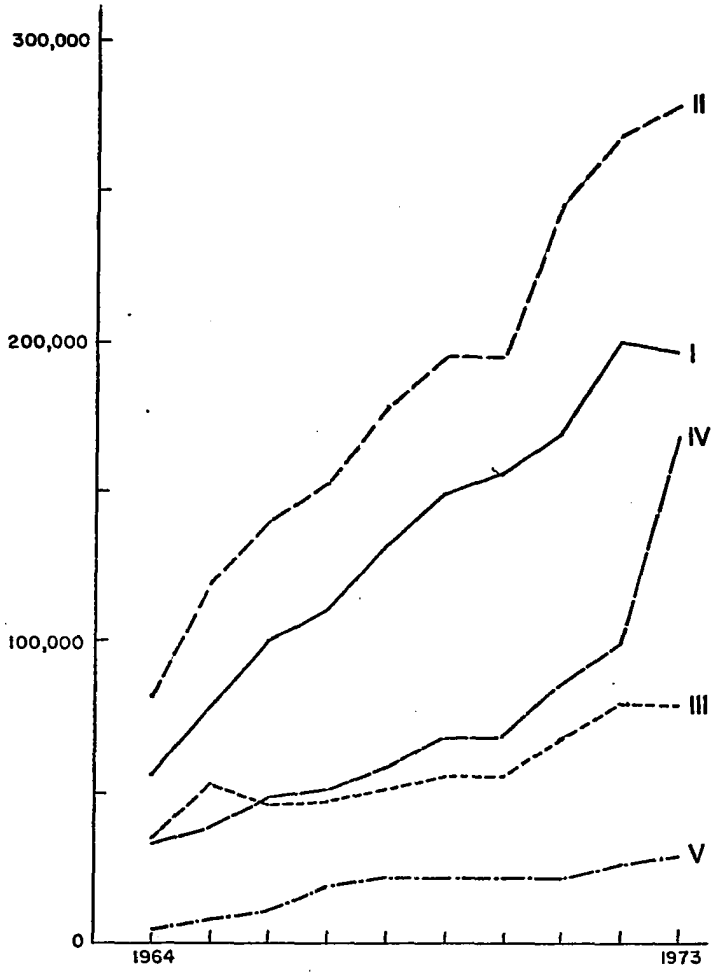

FIGURE 29. SAUDI ARABIA—TOTAL NUMBER OF STUDENTS BY REGION, 1964-1973.

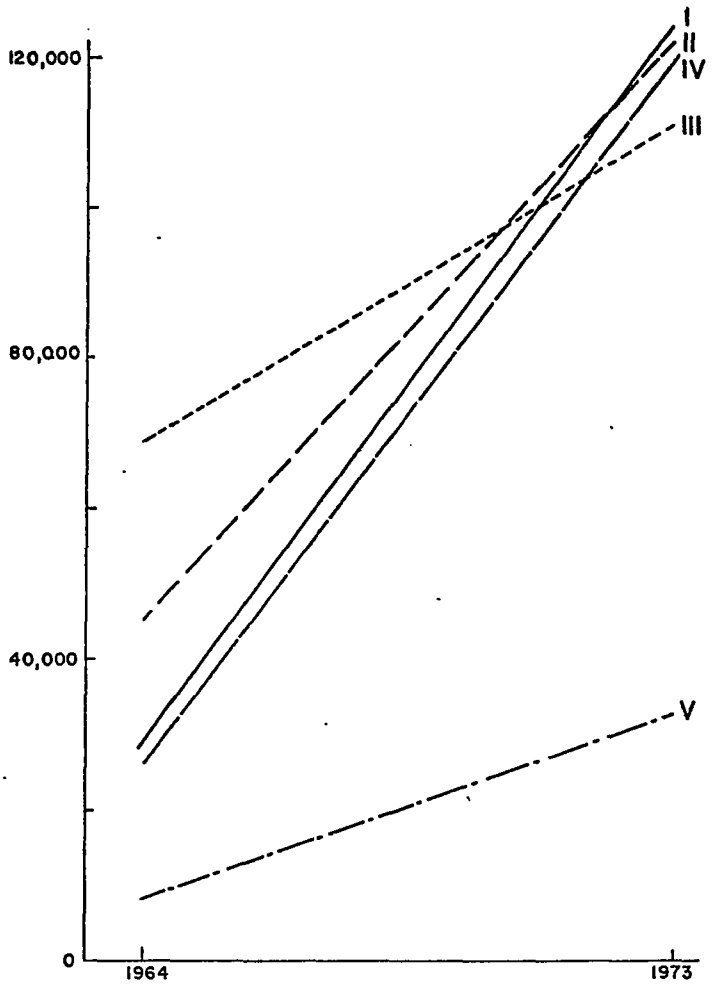

FIGURE 41. SAUDI ARABIA—NUMBER OF STUDENTS PER MILLION POPULATION BY REGION, 1964 AND 1973.

hospital beds, physicians and pharmacies, four health-care indicators, as shown in Figures 30 to 33 and 42 to 45. The distribution of the health-care facilities follows the same general regional pattern as does the number of education facilities shown in the three previous graphs. The West (Region II) ranks highest in number of hospitals and physicians, with 29 hospitals and 532 physicians in 1973, and is also highest on a per capita basis. The North (Region V), with far fewer people, had five hospitals and 60 physicians at the end of the decade under study. With the exception of the East (Region IV), which ended the decade with nine hospitals, two fewer than it had in 1964, all the regions gained in number of hospitals. In the West, Southwest and North, there was a spurt in hospital construction early in the decade with little change later in the period. Regions I and II, the most populous of the five, showed a sharp upswing in hospital openings between 1972 and 1973, from 17 to 30, and from 19 to 29, respectively. The hospital numbers considered here are only those built and operated by the government Ministry of Health. There are a few private hospitals in Jeddah and Riyadh, serving primarily upper income segments of the population.

Since hospitals vary greatly in size, and some smaller ones have closed as newer and larger ones have opened, the number of hospital beds is perhaps a better indicator of

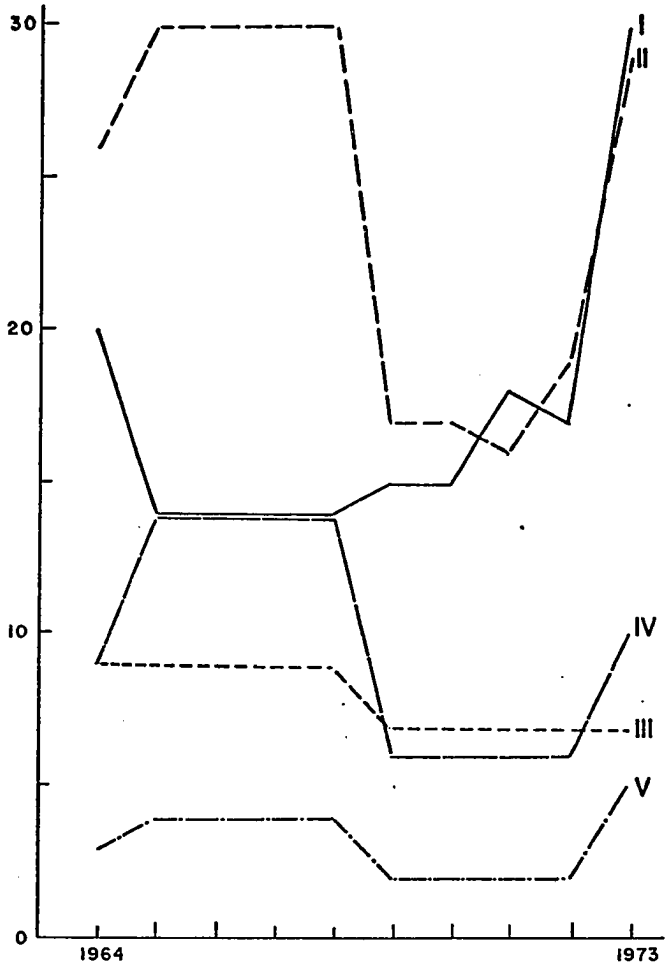

FIGURE 30. SAUDI ARABIA–NUMBER OF GOVERNMENT HOSPITALS BY REGION, 1964–1973.

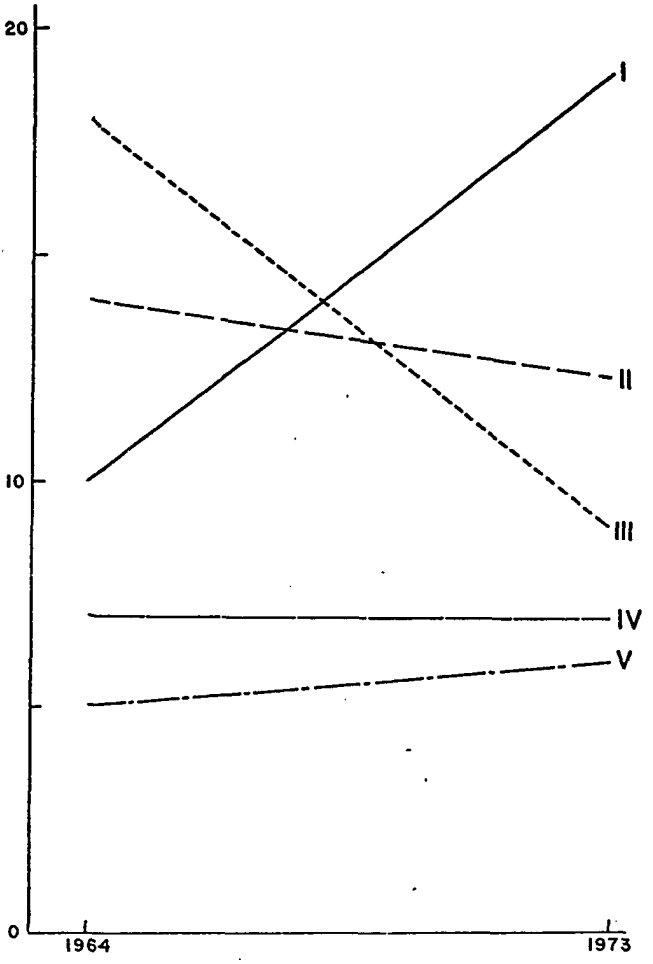

FIGURE 42. SAUDI ARABIA–NUMBER OF GOVERNMENT HOSPITALS PER MILLION POPULATION BY REGION, 1964 AND 1973.

health care development than the number of hospitals. Figures 31 and 43 show the regional change in number of hospital beds during the decade and the number of beds per capita in the five regions at the beginning and end of the decade. The North shows little or no improvement in the provisioning of hospital beds, while there has been a marked improvement in the other four regions, most notably in the West where by 1973 there was one Ministry of Health hospital bed for approximately each 400 persons. In the East, health care for oil company employees and their families has been provided by Aramco-owned hospitals. In the government hospitals considered in this study, health care is free.

The number of physicians in Saudi Arabia, shown in Figures 32 and 44, follows a steady upward trend throughout the decade, unlike the sometimes erratic progression shown in the number of hospitals, though the regional disparity remains. The number of physicians has been reported systematically only since 1965. At the outset of the period under study, the number of physicians in Ministry of Health hospitals varied from 150 in the West to only eight in the North, while in 1973 the number increased to 532 and 60 in these two regions. As is shown in the graphs, sharp periods of growth are indicated near the beginning and at the end of the decade. Regions II (West) and I (Center) show by far

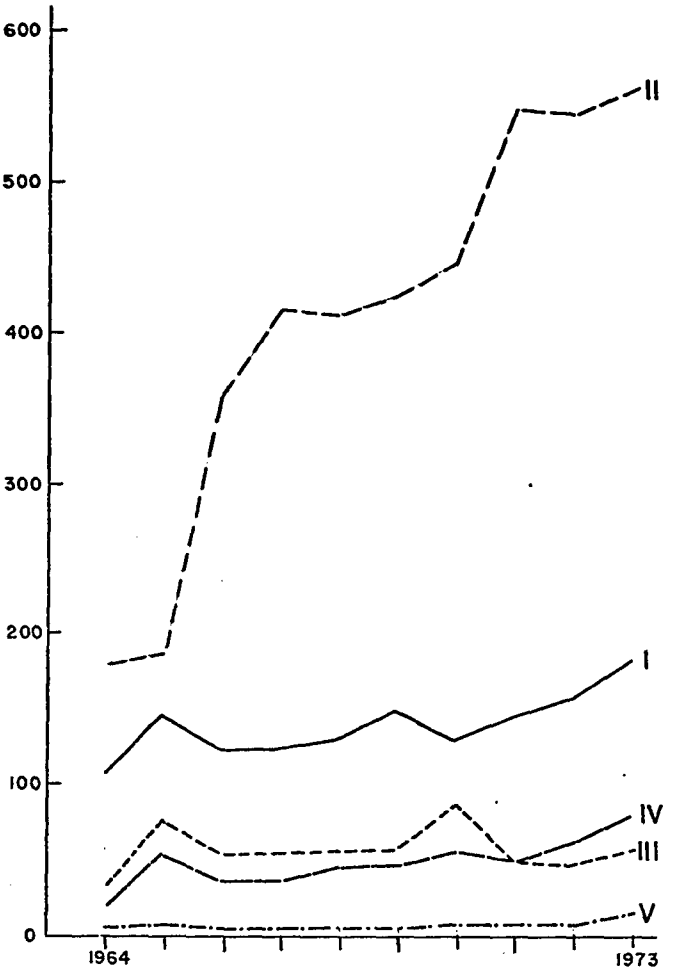

FIGURE 31. SAUDI ARABIA–NUMBER OF BEDS IN GOVERNMENT HOSPITALS BY REGION, 1964–1973.

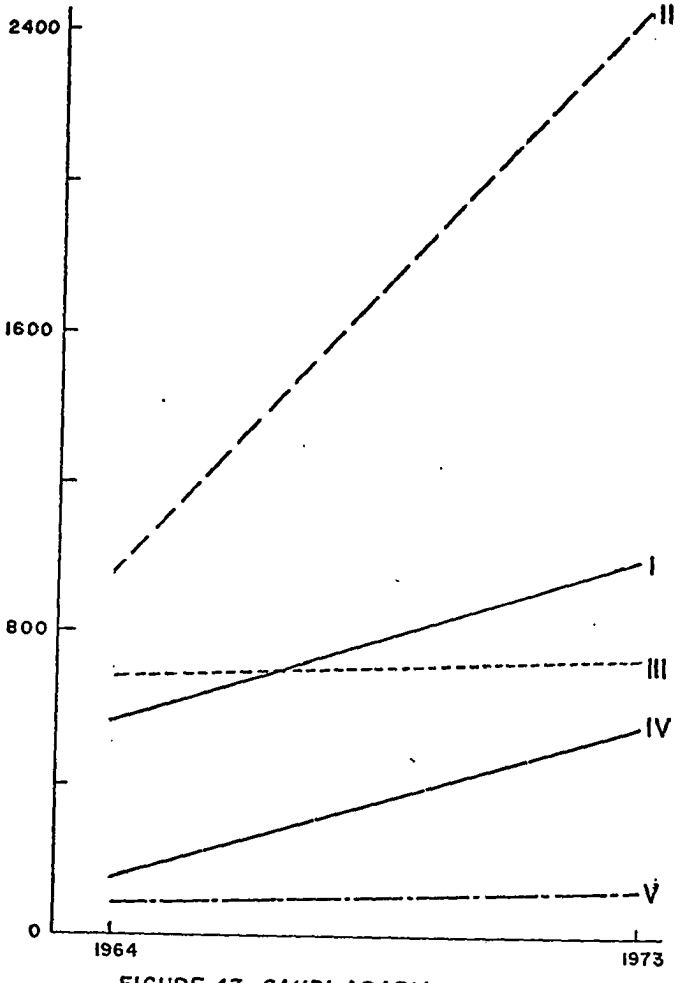

FIGURE 43. SAUDI ARABIA— NUMBER OF GOVERNMENT HOSPITAL BEDS PER MILLION POPULATION BY REGION, 1964 AND 1973.

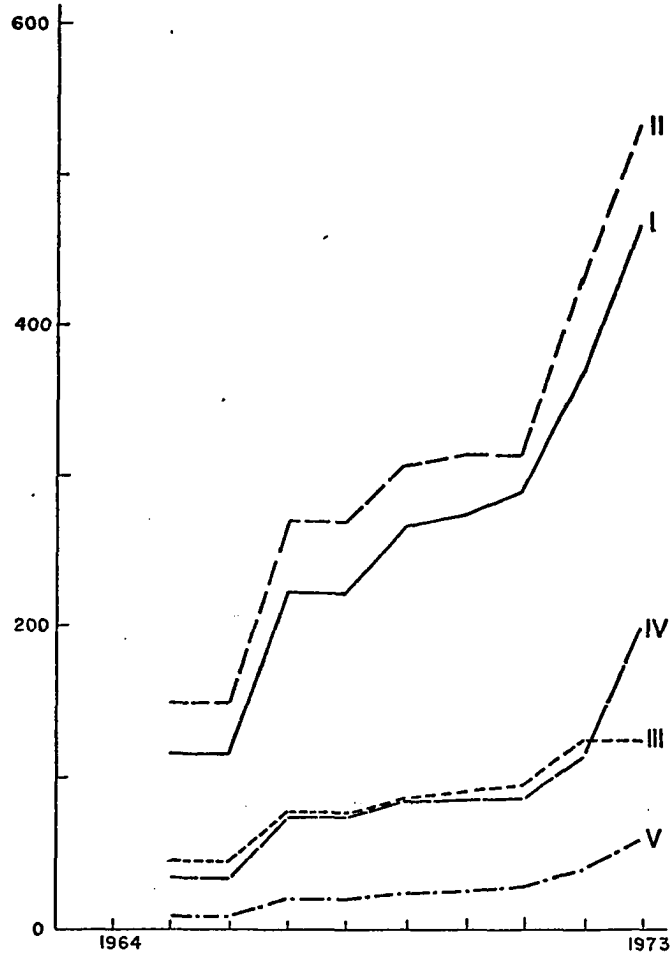

FIGURE 32. SAUDI ARABIA—NUMBER OF PHYSICIANS IN GOVERNMENT HOSPITALS BY REGION, 1964-1973.
(NO DATA AVAILABLE FOR 1964)

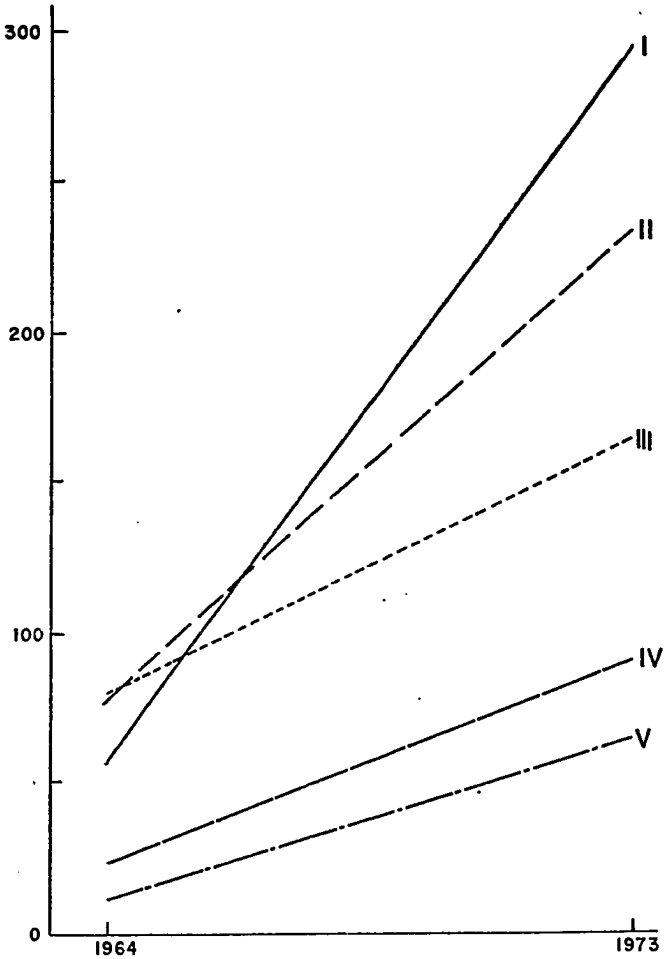

FIGURE 44. SAUDI ARABIA—NUMBER OF PHYSICIANS IN GOVERNMENT HOSPITALS PER MILLION POPULATION BY REGION, 1964 AND 1973.

the highest ratio of doctors to population, suggesting that in Saudi Arabia as in other developing countries the physicians prefer to practice in the major metropolitan centers. Probably 90 percent or more of the physicians practicing in Saudi Arabia are foreign nationals, over half of them from Egypt and Pakistan. The opening of a medical college at the University of Riyadh was noted in Chapter V.

Still another measure of health care in Saudi Arabia is the number of pharmacies authorized to dispense prescription drugs. In these establishments the pharmacists must be licensed by the Ministry of Health. Figures 33 and 45 indicate the growth in the number of pharmacies in the Center and Western regions (I and II). Year by year data is unavailable for the other three regions. Somewhat as in the case of the other health measures, the graphs chart a two- to three-year growth spurt at the start of the decade, followed by a leveling-off, and then a one-year rapid increase at the end of the study period. Region I, which began the period with only two pharmacies to serve a population of about one million, ended it with 17 pharmacies serving not quite two million. Region II, at the same time, increased its number of pharmacies from four to 12. Pharmacies with government-licensed pharmacists are now available in all five of the study regions.

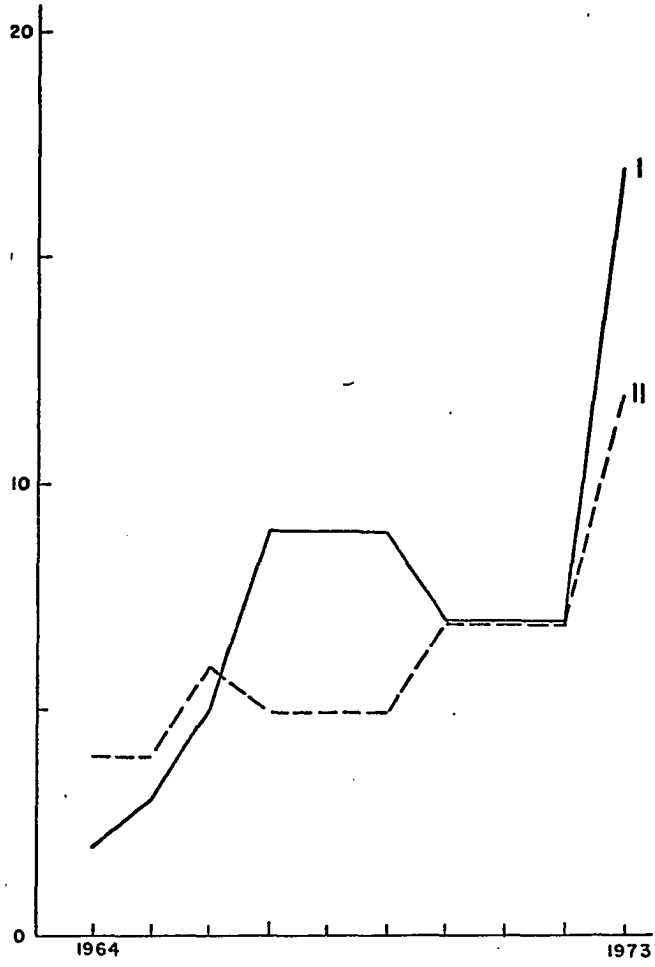

FIGURE 33. SAUDI ARABIA–NUMBER OF PHARMACIES BY REGION, 1964-1973.

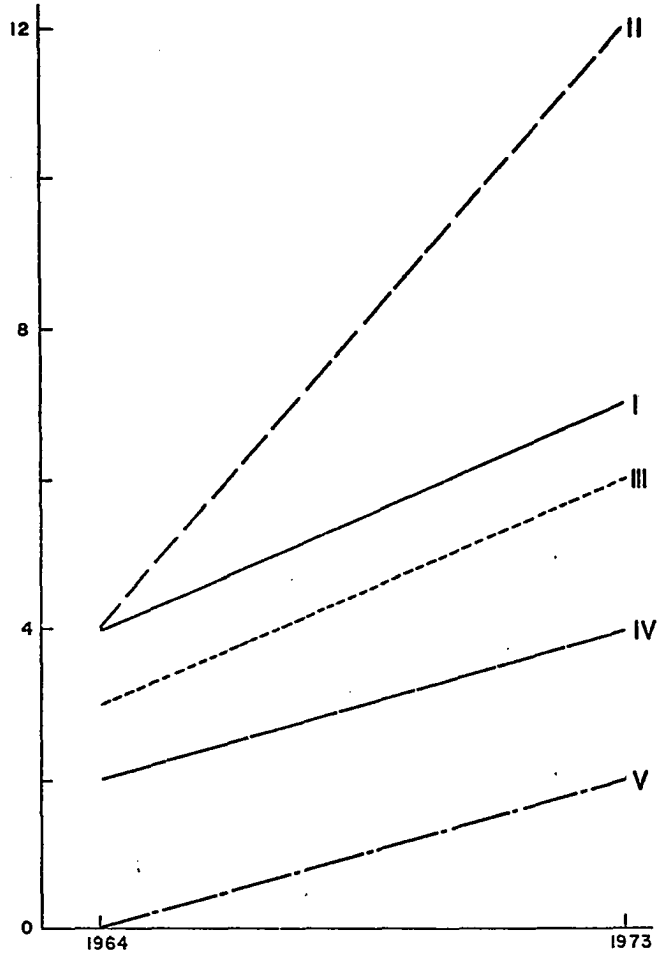

FIGURE 45. SAUDI ARABIA—NUMBER OF PHARMACISTS PER MILLION POPULATION BY REGION, 1964 AND 1973.

The extension and improvement of transportation facilities is considered here to be another major measure of national or regional development. Rail service in Saudi Arabia is limited to the one line from Dammam to Riyadh, and most passengers and freight move by road. Two measures of transportation development are included here, the number of roads or road segments completed and the total length of the motor road network. Figures 34 and 46 show the number of roads completed (regardless of length) and the number of such roads per capita at the beginning and end of the study period. Regions III and V show the lowest level of road-building activity, Region III probably because it was already quite well served in 1964 by roads built and maintained by Aramco. In Regions I, II, and IV, the number of road completions was much greater, reflecting a higher degree of overall growth and development. Since the number of roads completed had little relationship to the length of roads completed, some of the fluctuations in the trend lines can reasonably be ignored. Both Regions I and IV showed a dramatic increase between 1972 and 1973 in the number of roads completed per capita.

Since the physical environment of Saudi Arabia virtually precludes settlement in many parts of the country, the road network is sparse and will probably remain so. In

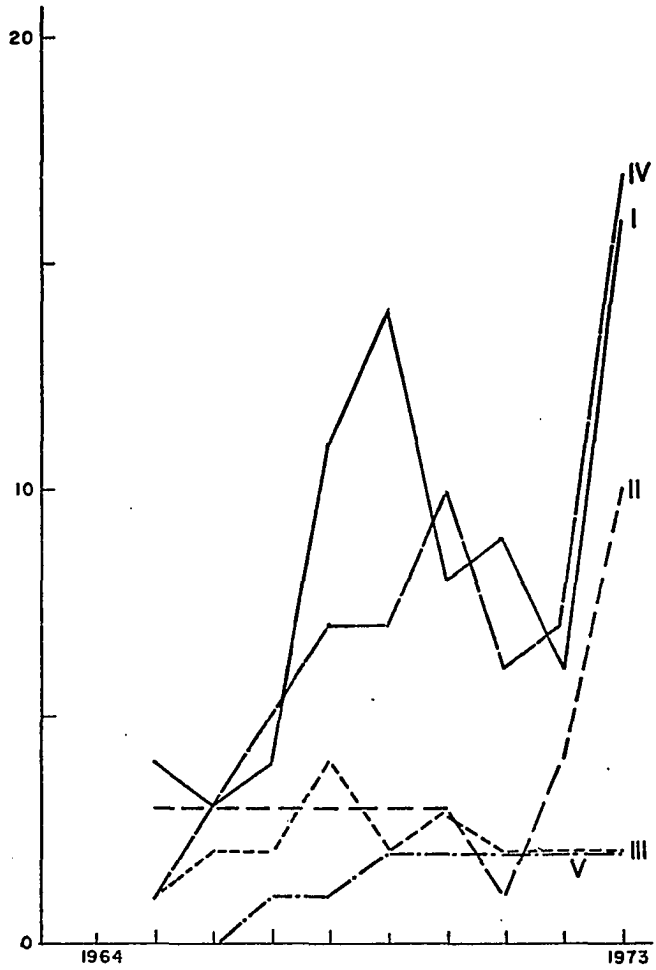

FIGURE 34· SAUDI ARABIA—NUMBER OF ROAD PROJECTS COMPLETED BY REGION, 1964-1973.

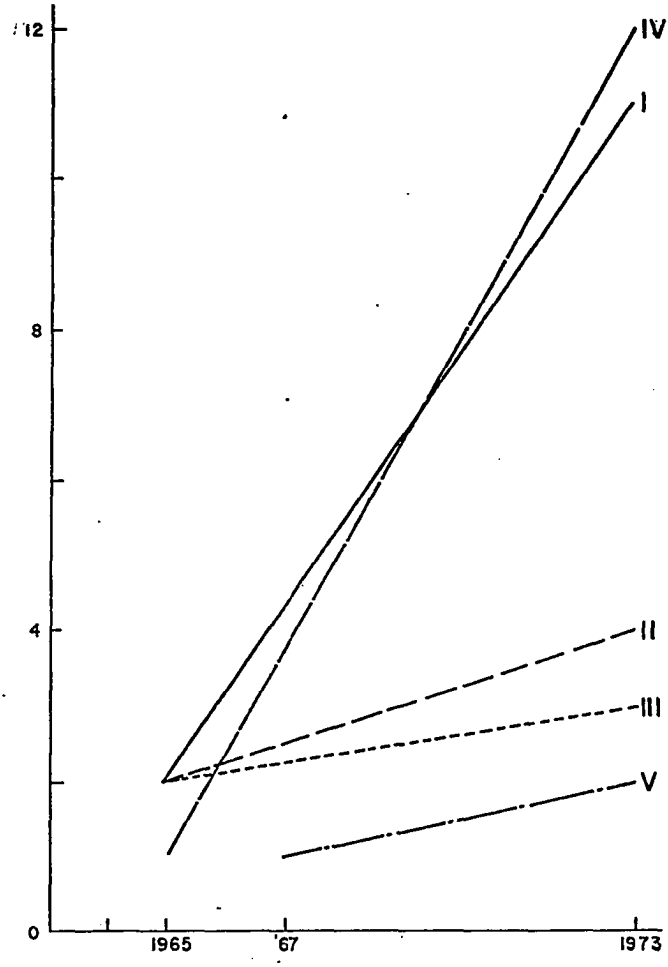

FIGURE 46. SAUDI ARABIA—NUMBER OF ROAD PROJECTS COMPLETED PER MILLION POPULATION BY REGION, 1965 AND 1973. *(COMPLETE DATA UNAVAILABLE)*

recent years, however, modern surfaced roads have been built to connect major urban centers and to reach a number of minor centers as well. Road building by the Ministry of Transportation has been going on in all five of the study regions.

Figures 35 and 47 portraying the total length of roads and road length per capita again show Regions III and V at the lower end of the scale. In 1964, Region III (East) had only five kilometers of government-built--i.e., non-Aramco--roads, but had 855 kilometers of such roads at the end of the decade. Region V (North) progressed from 33 to 344 kilometers. Region I (Center) on the other hand, already had 499 kilometers of surfaced road in 1964 and saw an extension to 4,883 kilometers by 1973, a nearly ten-fold increase. Regions II and IV also had an impressive amount of new construction. Apart from Regions III and V, where construction has moved more slowly, the progress of road building in Saudi Arabia, as shown in Figure 35, has been dramatic. Figures 48-51 summarize nine socio-economic variables.

The Williamson Inequality Index

The Williamson Inequality Index has been applied to the data at hand in an effort to determine whether regional inequality is persisting, increasing, or decreasing. The

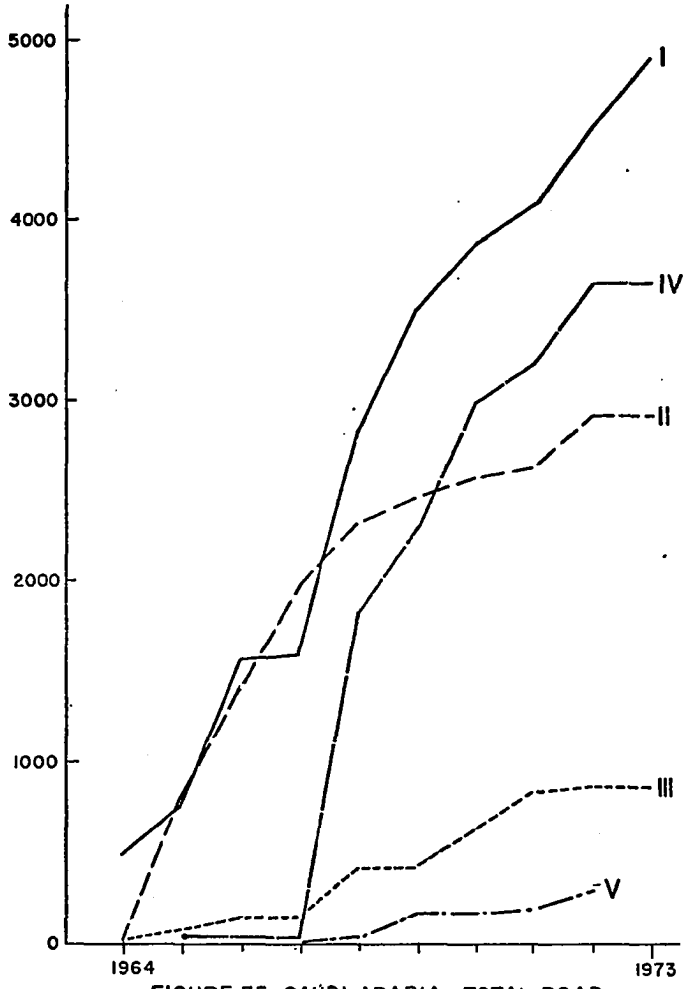

FIGURE 35. SAUDI ARABIA—TOTAL ROAD LENGTH (Km) BY REGION, 1964-1973.

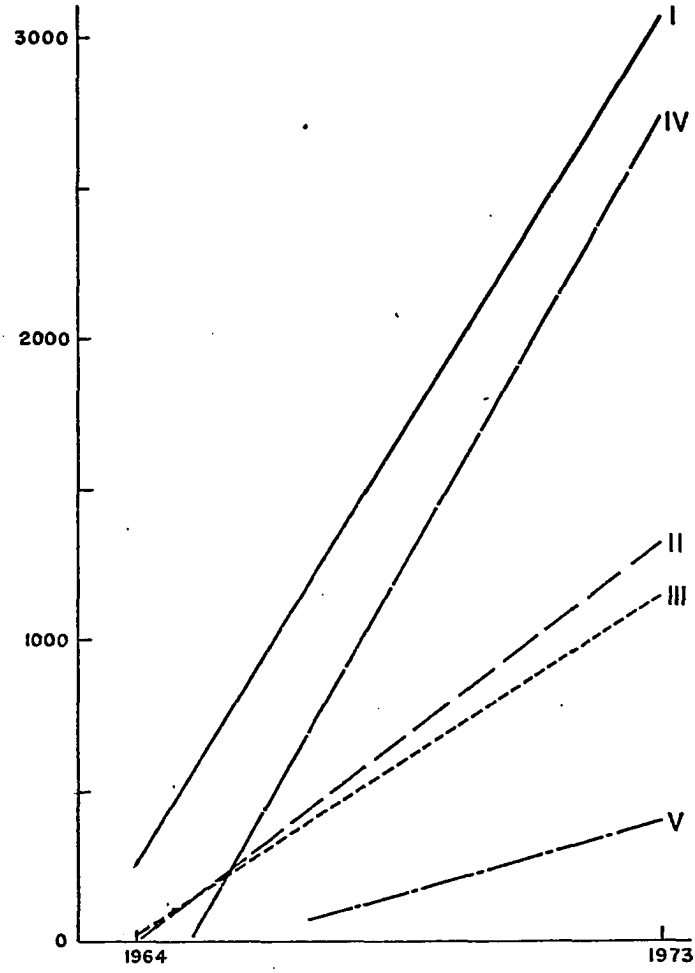

FIGURE 47. SAUDI ARABIA—ROAD LENGTH (Km) PER MILLION POPULATION BY REGION, 1964 AND 1973.

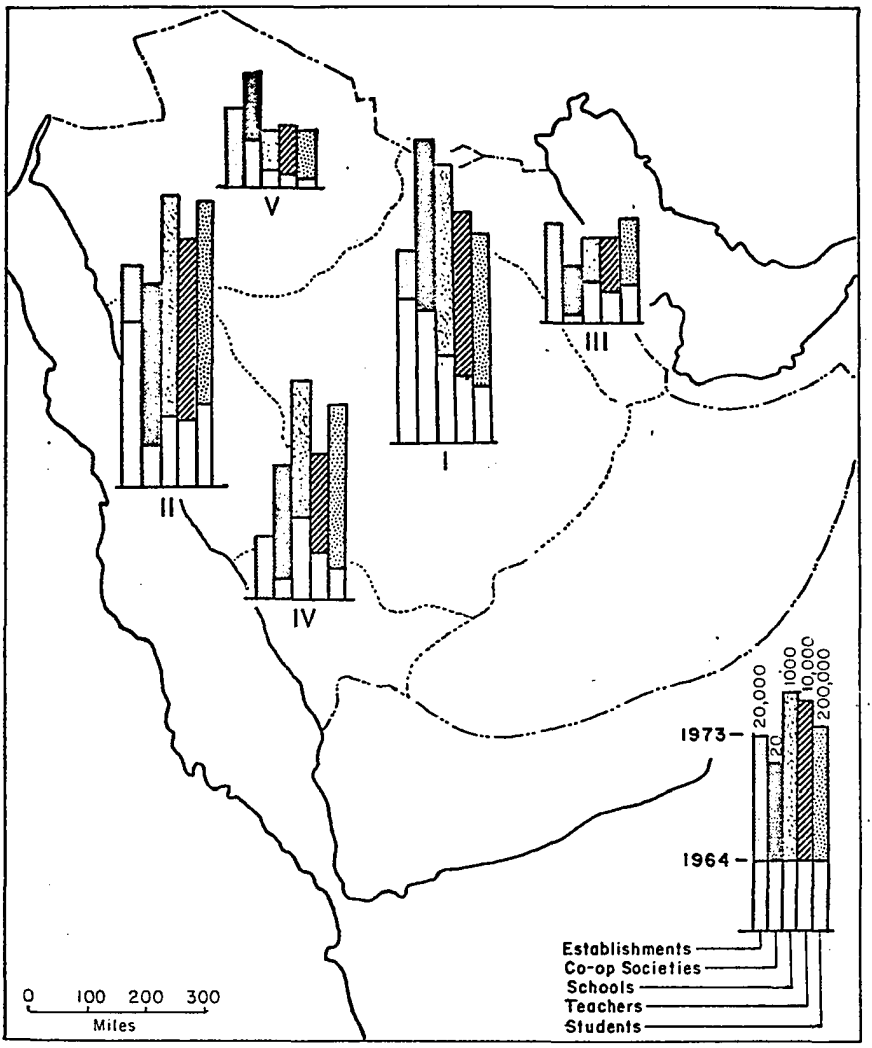

FIGURE 48. SAUDI ARABIA—TOTALS FOR FIVE SOCIO-ECONOMIC VARIABLES, 1964 AND 1973.

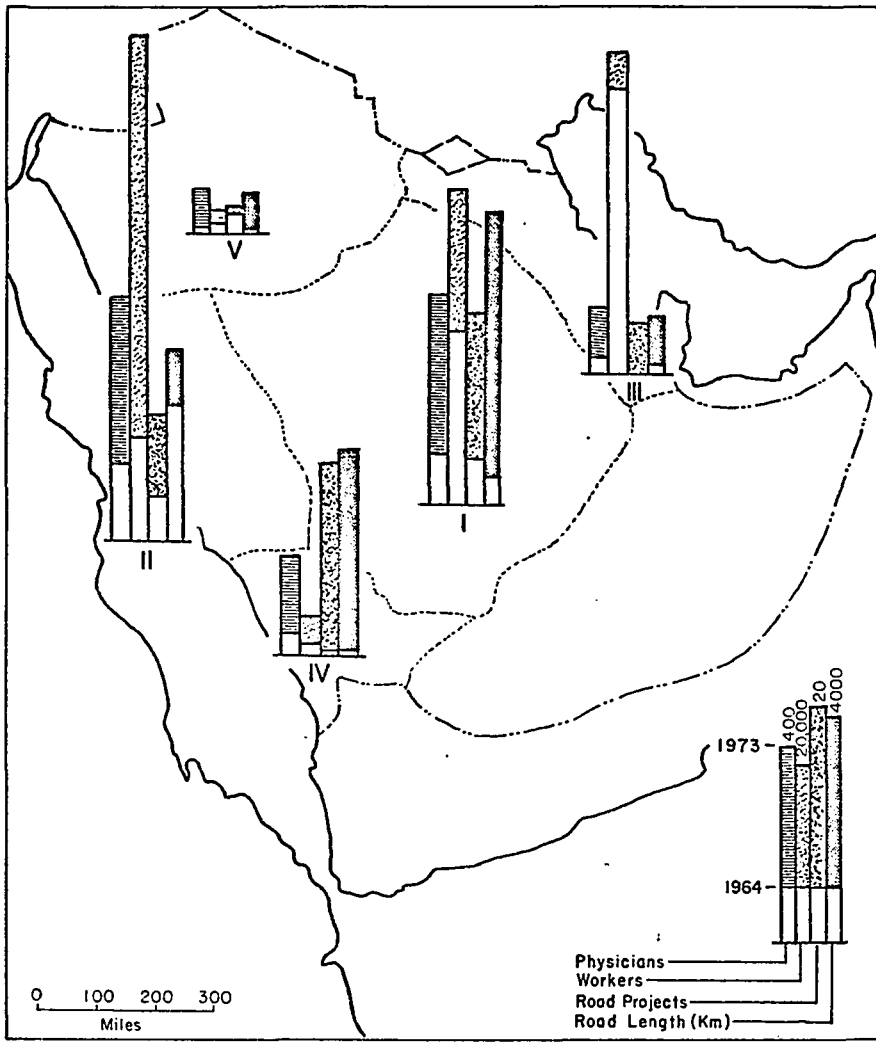

FIGURE 49. SAUDI ARABIA—TOTALS FOR FOUR SOCIO-ECONOMIC VARIABLES, 1964 AND 1973.

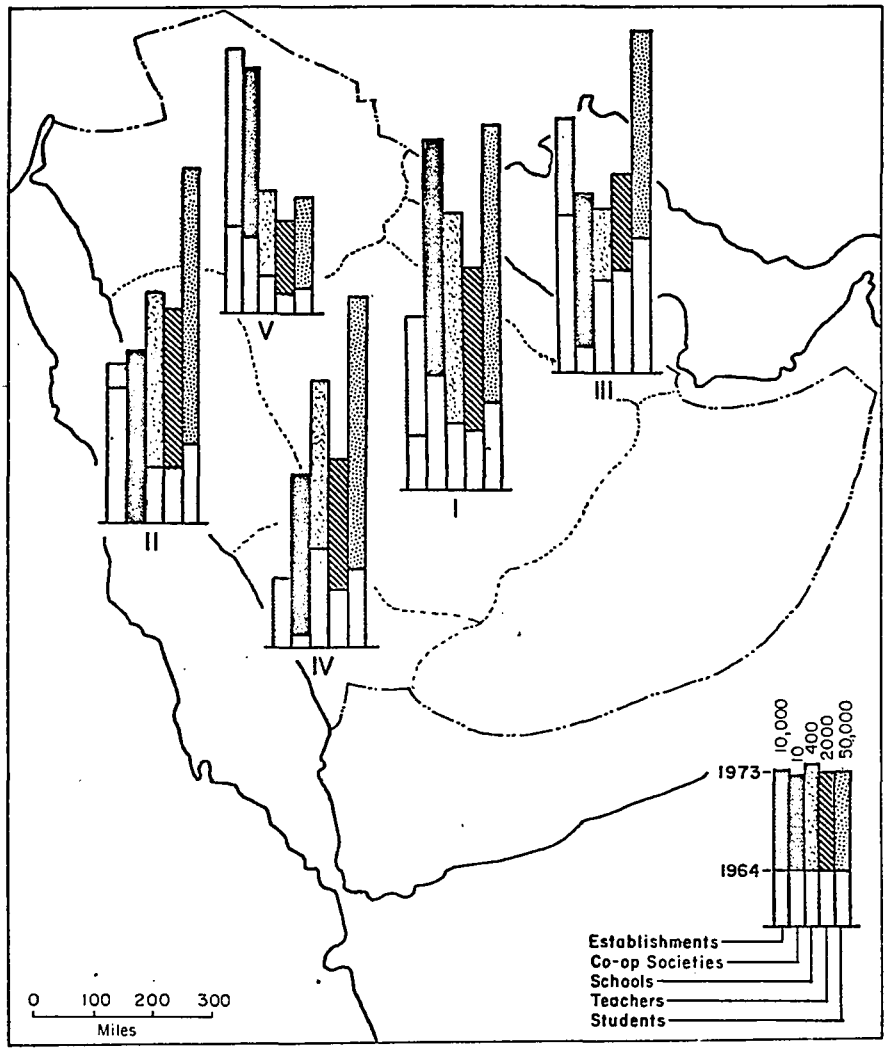

FIGURE 50. SAUDI ARABIA—TOTALS PER MILLION POPULATION FOR FIVE SOCIO-ECONOMIC VARIABLES, 1964 AND 1973.

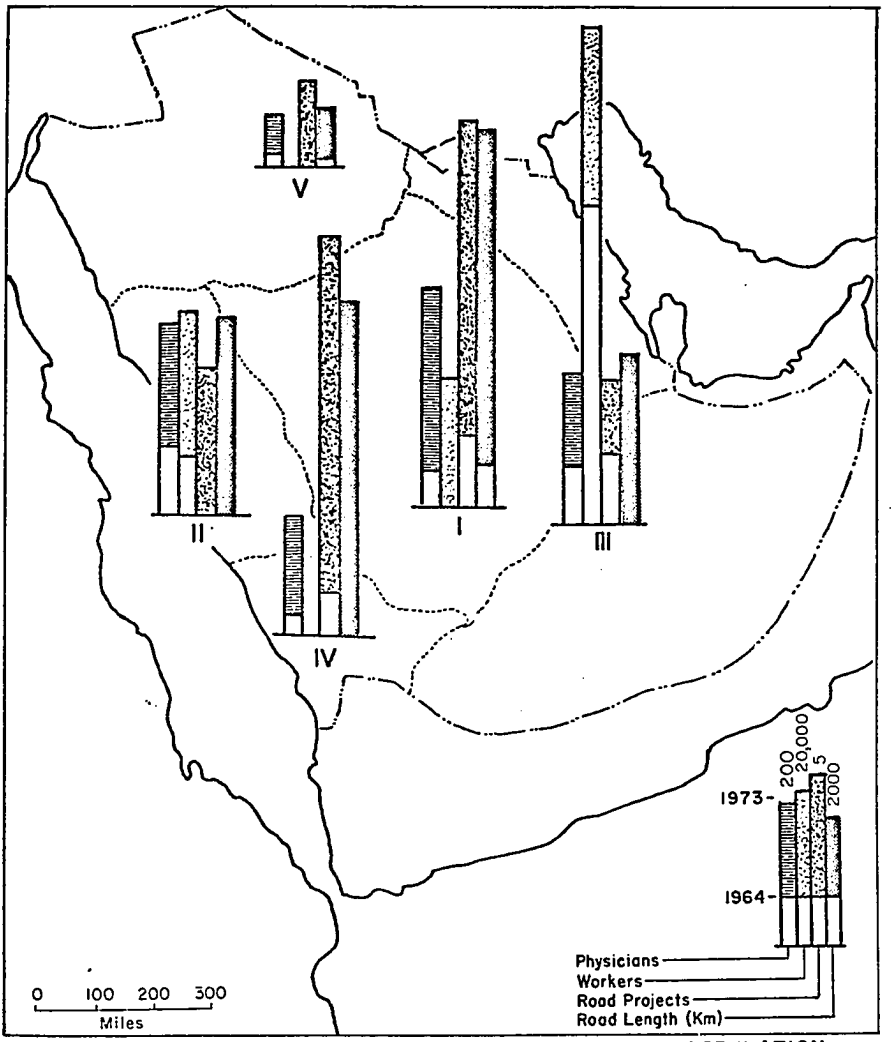

FIGURE 51. SAUDI ARABIA—TOTALS PER MILLION POPULATION FOR FOUR SOCIO-ECONOMIC VARIABLES, 1964 AND 1973.

usefulness of this method is somewhat limited when insufficient data are available, as is the situation with the Saudi Arabian data base. Not all twelve variables considered in this study could be subjected to analysis with the Williamson Index because some of the regions did not have sufficient data. While the graphs serve to chart the general trends, the Williamson Index would be unduly distorted if applied to some of the measures, since the lack of data for certain years in a given region would have to be interpreted as a zero value, and the consequent index would be distorted in the direction of artificially high values. For this reason, Table 10 shows 1964 and 1973 Williamson values for only five variables.

Applying the Williamson test to the five variables for which adequate data is available, the 1973 index of inequality was significantly lower than the 1964 index for establishments, teachers and students. For schools and hospitals, on the other hand, the 1973 index of inequality was somewhat higher. Overall, it seems evident that the five regions showed slightly less inequality at the end of the study decade than at the start. The Williamson Index is useful in resolving ambiguous cases, as for example, where the per capita graphs for teachers and hospitals do not unequivocally indicate either regional convergence or

TABLE 10

The Williamson Inequality Index for
Five Variables in 1964 and 1973

Variable	1964 Value	1973 Value
Establishments	.386	.313
Schools	.245	.276
Teachers	.339	.250
Students	.486	.401
Hospitals	.340	.405

divergence. The relatively lower 1973 index for teachers suggests a degree of convergence, while the relatively higher 1973 index for hospitals, when compared with the 1964 values, suggests divergence. The Williamson Index, on balance, reveals a modest tendency toward convergence, but the convergence trend is apparent in only three of the five measures. Unfortunately, the Index by itself cannot take into account the significance of changes in the average size of schools and hospitals.

Statistical Analyses

Analysis of variance (ANOVA) and Scheffé tests were employed in making a statistical examination of the relative progress of the five regions over the ten-year period of the study. For each of the twelve socio-economic measures (labor employed, number of hospital beds, road length, etc.), yearly per capita data for each region were compared over the ten-year period. A one-way ANOVA test was then performed on each measure to establish the mean per capita yearly increase in a given region, and to examine whether or not the regions are different from one another.

The results of the ANOVA tests are shown in Table 11 in the columns headed "F Ratio" and "F Probability." The last two columns indicate no significant regional difference

TABLE 11

RESULTS FROM THE ANALYSIS OF VARIANCE

Variable	F-Ratio	F-Probability	No Significant Difference Between Regions	Significantly High Regions
Labor Employed	9.436	0.001	I, II, IV, V	III
Establishments	31.998	0.001	I, II, III, IV	V
Coop Societies	15.433	0.001	I, II, III, IV	V
Schools	30.543	0.001	I, II, III, V	IV
Teachers	10.612	0.001	I, II, III, V	IV
Students	7.302	0.001	I, II, III, V	IV
Hospitals	9.499	0.001	I, II, III, V	IV
Physicians	5.065	0.002	I, II, III, V	IV
Pharmacies	0.571	0.663*	I, II, III, IV, V	-
Roads Completed	21.987	0.001	I, II, III, V	IV
Road Length	7.671	0.001	I, II, III, V	IV

*No significant difference at the .05 level. All other F-probabilities are less than .05 and, accordingly, the five regions are significantly different for the variables associated with these F-probabilities.

for pharmacies. For the other eleven measures, however, the ANOVA tests showed differences at the .001 or .002 level (i.e., 0.1 or 0.2 percent probability that the differences are due to chance), a statistically significant result.

The ANOVA test indicates only the existence of significant variations, when present, within the data, not where they occur. Thus, for each of the eleven measures found to have significant differences, Scheffé's procedure for multiple comparisons was applied. These tests showed that for all measures other than Pharmacies one region differed significantly from the other four. These four regions did not differ significantly one from another. Simple inspection of the data showed that in each case of divergence from the norm the different region was "higher," i.e., had a larger per capita yearly increase than the other four regions. In Table 11, these results are shown in the columns headed "No Significant Difference Between Regions" and "Significantly High Regions," the latter column listing the region which excelled in the given measure.

The results of the tests are interesting and convincing on the quantitative level, in the very low probability levels of the ANOVAs and the regular patterns resulting from the Scheffé tests. On eleven of the twelve measures, only

one region differed from the other four by a significant margin. Perhaps even more interesting is the qualitative evaluation of the test results. In each of the eleven cases where there was a difference, one region surged ahead of the other four in its rate of growth. There were no instances of a region being badly "left behind." It should be noted that Region I, which includes the residence of the Royal Family, was not "significantly high" on any measure; neither was Region II, which includes the Islamic holy cities of Mecca and Medina and the major seaport city of Jeddah. Thus, administrative decisions and government spending did not seem to especially favor the centers of royalty, religion, or commerce. Region III, the East, outstripped the others in terms of "labor employed," but this is scarcely surprising since the East is the region where petroleum production is centered. Among the remaining ten measures, Region V, the North, led in rate of growth in the number of establishments and cooperative societies, while Region IV, the Southwest, led in such measures as education, health, and roads. It is acknowledged, of course, that Regions IV and V still have much catching up to do, for they started the study decade at a very low level of development.

Insofar as the study data and the statistical analysis of it can be taken as indicative of government policy,

expressed through spending and its socio-economic results, it would seem evident that the "outlying" regions, the North and the Southwest, have benefited significantly over the ten-year period. The "established" regions, the West, Center, and East, have not been especially favored, except in the perhaps inevitable case of the East, where because of the resources and the presence of the foreign oil companies, much of the development has occurred through the impetus of the private sector. The greater role of the private, as against the government, sector in the Eastern region somewhat distorts the socio-economic measures considered in this study, for there Aramco has been the major moving force behind road building and even much school and hospital construction which would elsewhere be the responsibility of the government. Insofar as the Saudi Arabian government has directed the regional development, no region has been neglected or left to remain a "backwater."

It should be pointed out that the ten-year averages, on which the Anova and Scheffé tests are based, indicate nothing regarding trends within or relative movements among the variables. The tests employed cannot reveal divergence, convergence, or stability among the regional trends which are better indicated by the graphs in this chapter. The statistical tests indicate that some of the apparent

divergence in the graphs is due to the unequal rate of progress of the regions in a particular socio-economic measure during the course of the ten-year study period.

Backwash and Spread Effects

While the present study has shown regional growth throughout Saudi Arabia over the ten-year period 1964-73, the problem of growth poles and their attendant backwash or spread effects remains more complex. In terms of the twelve variables studied, it is clear that certain urban centers notably Riyadh, Jeddah, and Dammam, have been centers of growth, but their status as growth poles within the national economy was solidly established before the beginning of the decade considered here.

For most of the twelve socio-economic measures employed in this study, data is not available for studying detailed trends within the regions. In the case of education, however, enough spatial subdivisions exist to make this possible. Using the measure of number of elementary and intermediate students, Figures 52, 53, and 54 show that Riyadh gained students at a faster rate than did the surrounding subregions of Sudair, Washm, Hotah, and Aflaj districts. The Riyadh region's growth rate in elementary school attendance was about one and one-half times that of the

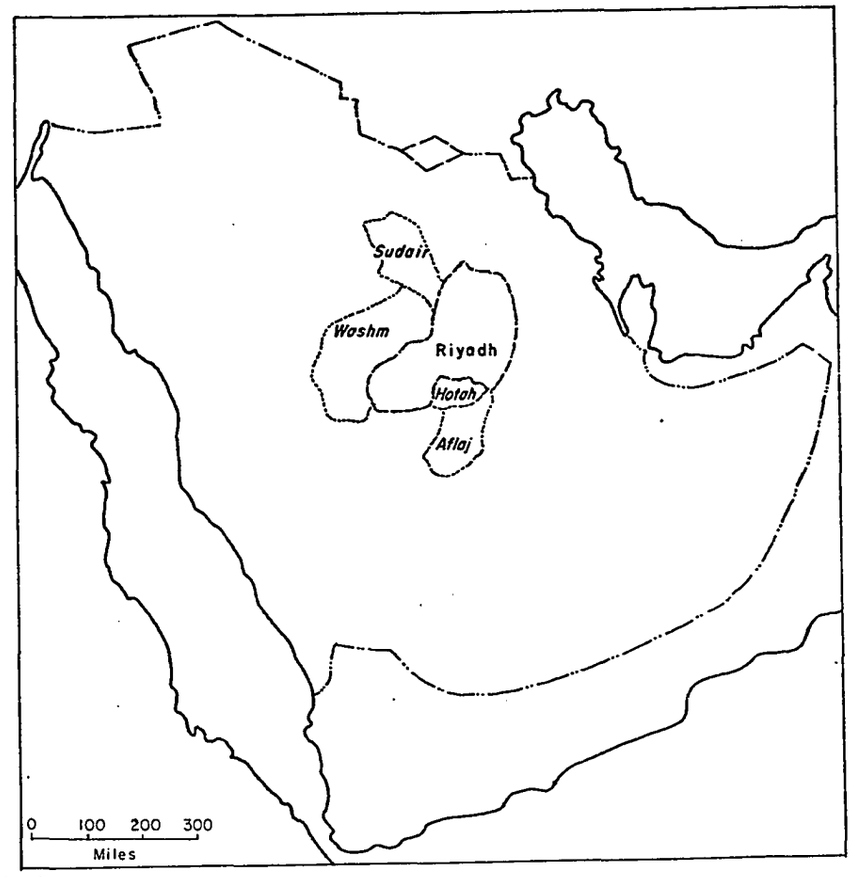

FIGURE 51. RIYADH AND ADJACENT EDUCATIONAL DISTRICTS

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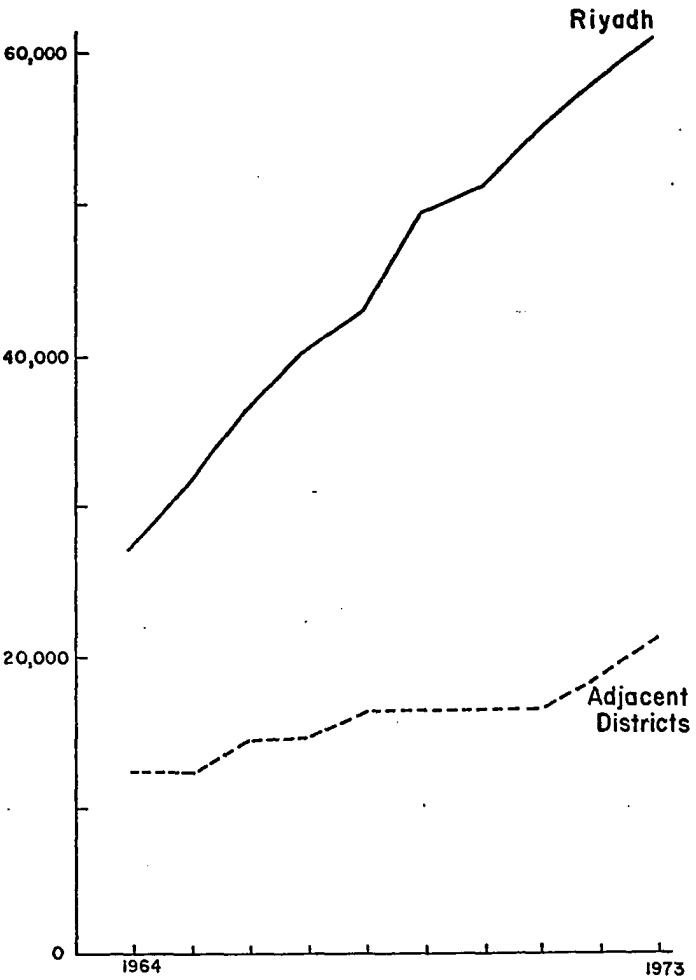

FIGURE 53. SAUDI ARABIA—NUMBER OF ELEMENTARY STUDENTS IN RIYADH AND ADJACENT EDUCATIONAL DISTRICTS, 1964–1973.

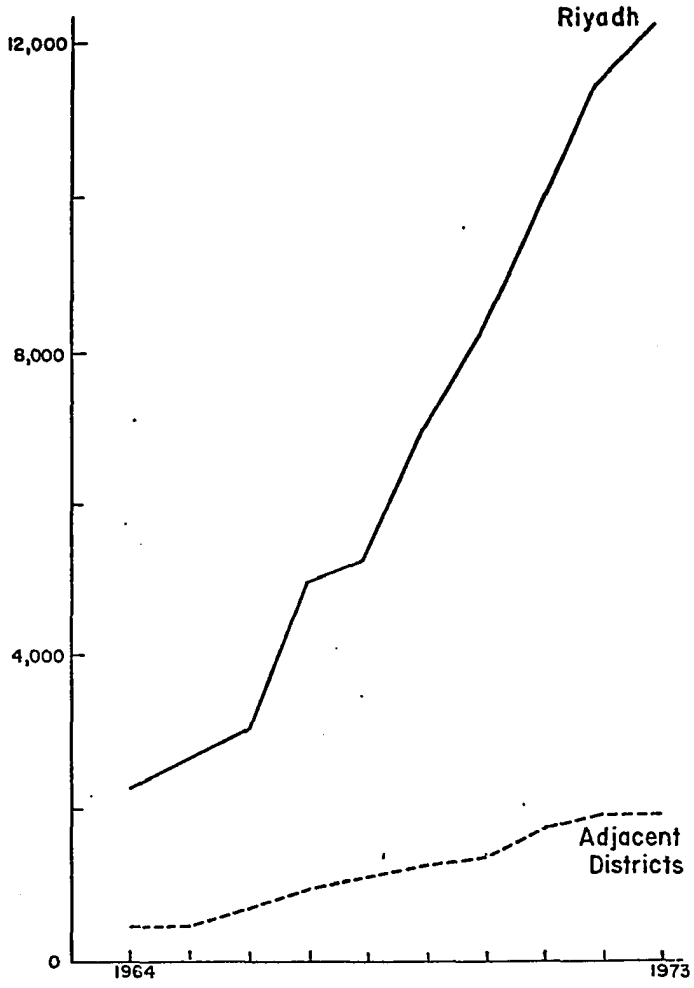

FIGURE 54. SAUDI ARABIA–NUMBER OF INTERMEDIATE STUDENTS IN RIYADH AND ADJACENT EDUCATIONAL DISTRICTS, 1964–1973.

surrounding towns. The same ratio is evident in the case of intermediate students, perhaps demonstrating some degree of backwash effect in favor of Riyadh. The pull of the capital city is a powerful one within the Center Region.

Unfortunately, data for other variables and for the outlying towns surrounding the major urban growth poles in the West and East are not available, so that growth pole analysis in terms of spread and backwash effect is not feasible if analytical precision is required. A general observation can, nevertheless, be made. While undoubtedly urban problems, with regard to both facilities and societal stability, have risen with the influx of both Saudi Arabians and foreigners to the major cities, the situation is not being allowed to get out of hand. Many of the existing social and economic problems were present before the beginning of the decade studied here, and they are not necessarily the outcome of polarization since the beginning of the more rapid rate of government spending on socio-economic development projects.

Government spending has been the chief source of development funding outside the housing sector of the economy, and if backwash effects are locally damaging or spread effects insufficient, government options exist which can immediately counteract negative tendencies.

The Myrdal model tested here is better adapted to the interpretation of the development process in countries where there is less central government direction. Just as the role of government funding has tended to move the Saudi regional economies in a way contrary to expectations from the Myrdal model, so it has tended to ameliorate social and economic inequalities around the growth poles within the five major regions and to assure a significant amount of growth and progress even in the outlying regions and districts.

The Application of Existing Models to the Saudi Arabian Case

As might be expected in the attempted application of one economic development model to all situations, the model used in this study fits at times and does not fit at others. The Myrdal model would suggest, or even predict, an initial period of unbalanced growth among Saudi Arabia's regions during the period of rapid economic growth and massive infusion of government funds. The expectation was partially fulfilled, since at least certain of the graphs in this chapter indicate some region-to-region divergence during particular years of the ten-year period under study. (For instance, Figures 32 and 34.) In general, however, the two null hypotheses proposed in Chapter I were sustained.

Considering the entire period of 1964-73, the Myrdal model's expectations were not fulfilled among Saudi Arabia's five regions. Although the tables and graphs contain insufficient evidence to indicate real convergence or divergence, perhaps because they do not extend over a long enough period, the degree of divergence, when present in a given indicator, usually tends to be very slight. The predominant trends, as revealed in the graphs, are rising trends. Even where there is some apparent divergence among the regions, there has been, in general, a significant upward movement within all of the regions involved.

The ANOVA test showed that, in terms of ten-year gains, the divergence within each variable was, with one exception, confined to one of the five regions. The Williamson Inequality Index, when applied to the five variables for which there was a complete ten-year data set, showed results consistent with the graphed trends. This index supplied additional evidence to help in understanding the ambiguous trends in two of the variables, Teachers and Hospitals.

Chapter VII

CONCLUSION

On the basis of data gathered and analyzed in the present study, it can be concluded that the spatial impact of government spending in Saudi Arabia has been overall regional growth. While short periods of either divergence or convergence were observed among the twelve selected economic and social variables during the period 1964-73 among the five regions, the predominant movement was essentially parallel and upward.

A major conclusion of the study, then, is that the expectations of the Myrdal model were, in general, not realized in the Saudi Arabian case. While Region V, the North, in many instances has been at a decided economic disadvantage in terms of regional growth in relation to the other four regions, it nevertheless exhibited a significant growth rather than stagnation over the ten-year period. Among the regions and variables considered, the greatest apparent convergence or divergence tended to occur in the early part of the study period, with an eventual leveling out to at least a more modest degree of either convergence

or divergence. Thus, in Saudi Arabia, an equalizing diffusion of progress has resulted after the initiation of large-scale government programs in social and economic development. The available data seems to indicate that the modernization of a backward country, or underdeveloped region, can be achieved rapidly throughout the area involved, given sufficiently large applications of capital under central direction.

It is concluded that government domestic expenditure in the Saudi economy plays the role that private investment and government expenditure play together in the standard Keynesian development model. The determination of the aggregate demand for goods and services in Saudi Arabia still depends primarily on government domestic expenditures. However, any overall evaluation of economic development in Saudi Arabia would have to be a composite of many factors in addition to those considered here, and reflected in such widely employed economic measures as gross national product (GNP), mean per capita income, capital accumulation, and consumer spending in the private-sector. Even rates of government expenditure in terms of Saudi Arabian riyals have been given little attention in portraying trends in this study because inflation during the ten-year study period averaged ten to twenty percent per year, and the actual achievement record is more meaningful. Since 1974, inflation has intensified to a rate of perhaps fifty percent per year.

An obvious and unfortunate factor in the development process in Saudi Arabia is the narrowness of the productive base. Aside from crude oil, in which Saudi Arabia has and will have for several decades a strong world position, the nation has not sufficiently developed any other natural resources capable of supporting a meaningful agricultural or industrial expansion. Vigorous efforts are being made to identify and develop other domestic resources, but public sector foreign investment, as in the case of little Nauru, may well have to be a major part of Saudi Arabia's long-term economic future.

The present study concludes with a planning model for Saudi Arabia that reflects and summarizes the Saudi government's present philosophy and policies. The model consists of ten aspects of the Saudi Arabian plan of development, the last two of which--perhaps unfortunately--are not applicable to most developing countries. The first eight aspects are offered as recommendations for other underdeveloped nations (Figure 55).

1. Social freedom within a planned economy. The Saudi Arabian model provides incentives to the private sector and encourages private participation in the national development effort under supervision of the various government ministries. Entrepreneurial and labor skills needed for

modern enterprise are in extremely short supply, and the government is in the position of being the mainspring of change. It is the government which authorizes and negotiates for foreign labor, materials, and technical assistance. Along with encouraging free enterprise among the local citizens, the government fosters various kinds of cooperative organizations and activities. Strong central planning and the application of government funds act as a stimulus to economic activity, but so far without extensive programs of socialization or economic regimentation.

2. Economic and social equality. An important goal of the Saudi Arabian model is the realization of substantial economic and social equality. While any overall rise in national or regional output would indicate economic growth, an important consideration in the national plan is the self-respect of individuals, a broad-based rise in the standard of living, and a wider distribution of the national wealth. Economic development in Saudi Arabia is intended to relieve poverty and reduce regional and class inequalities. A chief characteristic of the Saudi nation, as noted in Chapter III, is the alliance of spiritual and temporal power. The nation, reflecting a centuries-old Islamic tradition, does not have an elaborate system of strongly pronounced class divisions. Islam, with its doctrine that all the faithful are brothers,

has not favored a hierarchy of classes. There is a prevailing sentiment which seeks impartiality as between the rich and the poor, and urges that the reduction of poverty and distress among Arabs and Muslims everywhere should be a prime concern of the ruling authorities.

3. Social evolution, not revolution. The new and the old exist side by side in Saudi Arabia. There has not been a ruthless uprooting of the traditional society or gross social displacement for the sake of change. The great national water projects, the land distribution program, and the various government-sponsored training programs evidence an official policy of preserving and improving the environment and traditional life style. Oil revenues have been applied to national welfare plans which involve the needs of all social classes, not only the rich and the politically powerful. While the government continues to be monarchical, with many top administrative posts held by members of the royal family, it has adapted some aspects of the Western parliamentary process to its planning procedures and the organization of its ministries. Full consideration is being given to the cultural heritage, historical characteristics, native capacities, and natural resources of the various regions of the country. The development of local understanding and acceptance of new government programs has been furthered by

numerous government publications which describe and explain them. The King and his ministers want to prevent a too rapid revolution which might have long-term negative social consequences. The model for Saudi Arabian development is consistent with the national political, social, and religious ideology.

4. Balanced regional development. The data assembled in the present study clearly indicate efforts to achieve a balanced regional development. While there were some initial regional inequalities, and certain of these inequalities persist even now, an equalizing diffusion of progress has resulted since the initiation of massive government funding on a national scale. The Saudi Arabian model is one of a small number of cases where the modernization of a "backward area," or "underdeveloped region," is being achieved rapidly with large applications of capital under central direction.

5. Formal and comprehensive planning. A key feature of the Saudi model is the emergence of comprehensive government planning. After some trial and error, the central government has produced relevant governmental structures such as the Central Planning Organization (CPO), and now the Ministry of Planning, and the Saudi Arabian Monetary Agency (SAMA) which, together with the various associated ministries, originate many of the plans for social and economic development. The Saudi planning model does not offer a rigid,

restrictive set of rules and regulations, but rather a means of bringing increased rationality into public sector programs by establishing priorities and integrating planning activities. To achieve better administrative control, the government is developing a comprehensive statistical program that will eventually include the expansion and improvement of all statistical series including a complete population census. A major and continuing problem in providing relevant governmental structures for planning is the lack of adequate numbers of trained specialists.

6. Appropriate financial institutions. A basic feature of the Saudi model is the emergence of appropriate financial institutions for a growing economy. In particular, SAMA has functioned as the government's auditor, fiscal control center, and statistical analyst, and has performed many of the functions of a central bank. In addition to supervising the operations of private commercial banks, SAMA has established a national Agricultural Bank, an Industrial Bank (the Industrial Finance Institution) for large borrowers, and a smaller institution, the Credit Bank, for persons of relatively limited means. These institutions provide loans to private sectors of the economy including agricultural, housing, and industrial-commercial interests. Domestic investment has been at a high rate, particularly in

the last few years.

7. Solvency and self-sustained growth. The Saudi model calls for financial development from current income which means, of course, primarily revenue from oil. The goal of the model is an eventual self-sufficiency which relies less heavily on oil production. It calls for a favorable balance of payments, a rapid growth of the GNP, and planned budgetary surpluses. It recognizes that if economic gains are to be extended, or even maintained over the long run, alternative income sources must be developed. The model calls for increasing the rate of growth of the domestic product (GDP), diversifying sources of national income, and reducing dependence on oil through enlarging the share of other productive sectors in the gross domestic product. It projects the development of human resources so that the several elements of the national society will be able to contribute more effectively to production and to participate more fully in the process of development.

8. Foreign labor and technical assistance. The Saudi model includes the utilization of foreign resources in the form of foreign labor and technical assistance in areas such as finance, business, and industry. The goal is to eventually overcome the dependence on foreign personnel and to utilize a much larger fraction of Saudi citizens in the

development effort. This goal is exemplified in the CPO's plan for raod development, under which some of the road construction contracts are placed with Saudi engineering firms. Of special importance in the Saudi model have been the contributions of the International Monetary Fund (IMF) and of the various foreign oil companies which have been granted oil concessions under the authority of Petromin. This government agency, which coordinates petroleum development in the country, frequently engages in joint-venture industrial operations with foreign firms.

9. A single source of wealth--oil. Government domestic expenditure in the Saudi Arabian case is almost totally dependent on oil revenues. Unlike the conditions presumed in the theoretical Keynesian model, here the government is the main generator of income in the economy. While the Saudi government is in the unique position of possessing extreme wealth in the midst of widespread private poverty, it is nevertheless responding positively to the social challenges already detailed.

Unfortunately, few developing nations can expect to have such sudden access to tremendous wealth. This ninth principle, then, is a special characteristic of the Saudi Arabian case and typically is not applicable to most developing countries. While the first eight principles are relevant to

the situation in many low income countries, it is precisely the huge revenues from oil that give the Saudi model of economic development some of its key characteristics.

10. A single major source of development funding--the government. While the private sector and foreign sources provide some capital for economic development in Saudi Arabia, the government itself constitutes the major source of development funding. This places an enormous managerial responsibility on the administration, but it also offers a great opportunity for national self-determination. This opportunity is simply not available to most other under-developed countries.

Figure 55 represents in simple graphic form the Saudi strategy for developing a viable society and economy out of the present socio-economic situation. In the figure, the solid lines represent the present circumstances and basically indicate cash-flow. Starting at the upper left, "Income from Petroleum Exports" flows into the "National Government." The government then distributes this income--within Saudi Arabia--to establish and sustain a variety of institutions and activities. These include "Financial Institutions" and "Business and Industry" which, hopefully, will interact, e.g., by a bank financing a new business establishment which will eventually repay its loan or

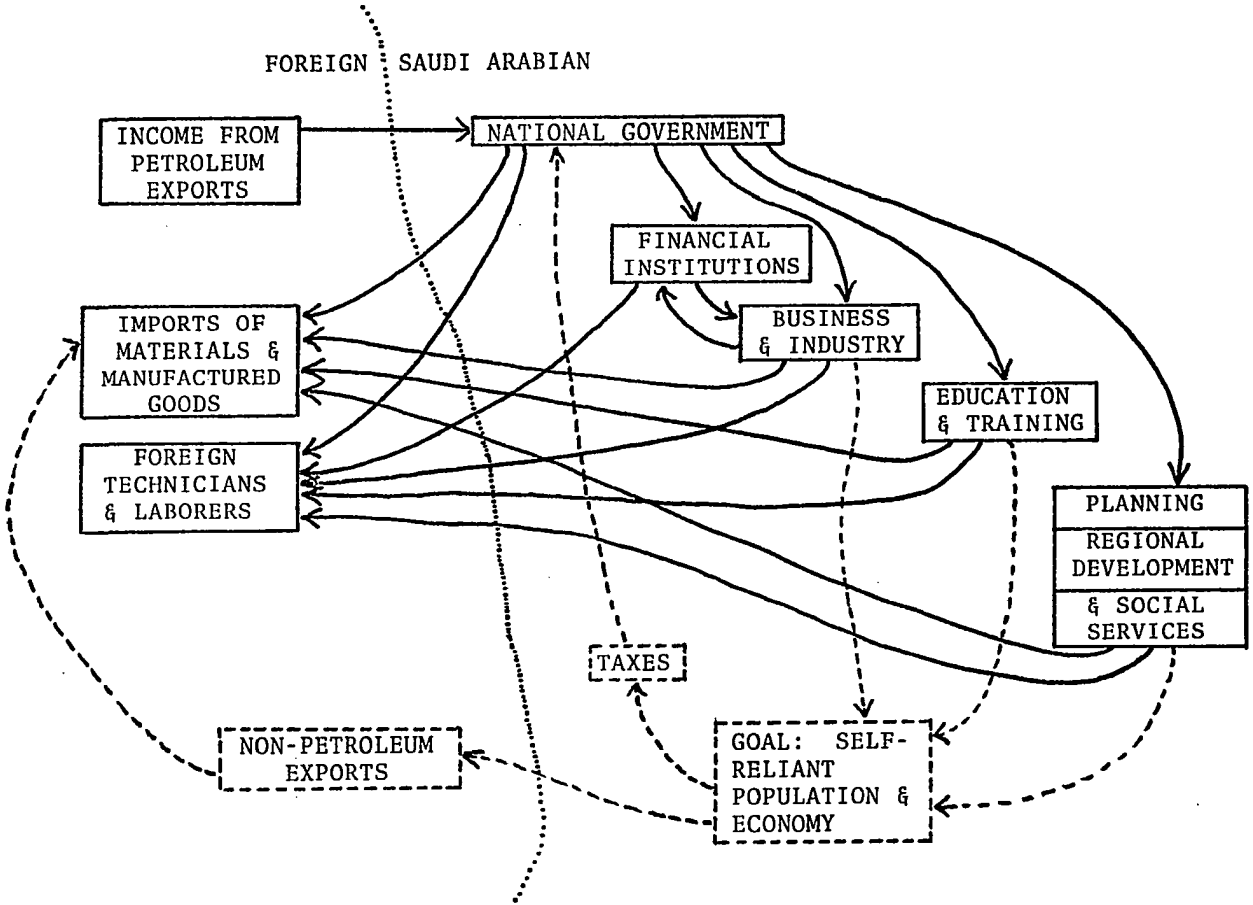

FIGURE 55 - THE SAUDI STRATEGY FOR NATIONAL DEVELOPMENT

mortgage out of its profits. Other cash-flows go to "Education and Training," "Planning Regional Development," and "Social Services," all government-subsidized activities.

Continuing to follow the solid lines, some of the petroleum-export income, which earlier in the model flows into the government, appears as an immediate out-flow to sustain the economy since Saudi Arabia must pay for "Imports of Materials and Manufactured Goods" and "Foreign Technicians and Laborers." To reduce this dependency, the government expends a portion of its petroleum-export income to educate and train its own population. To accomplish its long-range goals, the government must temporarily import foreign teachers and, at the same time, send many of its students out of the country to live and study in foreign lands.

Thus, while gross import-export figures indicate a reasonably stable balance of trade, the present fact is that Saudi Arabia is exporting oil and importing virtually everything required to maintain its society above a predominantly nomadic and subsistence level. It is importing not just raw materials and goods, but also human resources on an impressive scale.

The long-term plan of Saudi development is shown by the broken lines of the figure. While the solid lines indicate cash-flow, the broken lines represent a complex of factors,

all aimed at one primary "Goal: Self-Reliant Population and Economy." Through government distribution of petroleum-export income, the nation seeks to (from bottom-right of the figure): develop a healthy, virile, aggressive population within stable geographical regions. It proposes to train and educate the citizens, increasingly with Saudi teachers; to build national industries, commercial establishments, and concomitant financial institutions, so that, for instance, a Saudi-owned factory is directed by Saudi managers and engineers, and is staffed by Saudi technicians and trained laborers.

Thus, following the dotted lines in the graphic model, a Saudi industry, staffed by Saudi citizens, will eventually produce "Non-Petroleum Exports" whose value will help balance the necessary imports of foreign materials, goods, and human resources. The increase in exports will be accompanied by a decrease in the dependence on imports and foreign personnel. A working populace and a productive industrial establishment will then generate "Taxes," the revenues from which will progressively replace the government's dependence on petroleum exports as the sole source of income. In summary, the national government of Saudi Arabia is reinvesting its considerable income from petroleum exports to develop the foundations of a viable, self-sufficient nation.

Chapters III and V of this study have included numerous statistics and graphs portraying growth in such areas as transportation, education, and health care, with data on road construction, numbers of students, teachers, physicians, hospital beds, etc. Such statistics must be viewed in perspective. Development progress in Saudi Arabia must be measured against the base line of the nation's condition as it entered the present era and the specific period of the study. Since this is a dissertation in geography--a field which is literally defined as a "description of the earth"--it is appropriate to ask to what extent government developmental policies and expenditures have changed the landscape in the period under study (1964-1973) and, more broadly, in the generation since World War II.

The most obvious landscape changes have been in the oil fields of the East (Region III of this study), where there is now a remarkable array of wells, pipelines, refineries, roads, cities, housing clusters, and associated facilities. In addition, there is the growth of the two major cities, Jeddah and Riyadh, and of the road network connecting them. However, viewed in the perspective of the vast expanses of the whole national territory, the highway system is still quite sparse and rudimentary. The inclusion

of railways, air routes, and sea-lanes scarcely alters the picture. Saudi Arabia in many ways is still a very rural country. Only ten urban settlements have populations of 30,000 or more. The majority of the population, which is officially calculated at about seven millions, but includes perhaps another million of foreign workers and employees, remains nomadic or bound to an agricultural economy still largely of a subsistence nature.

The fact that the population of Saudi Arabia has not become heavily urbanized may, in fact, be viewed as a fortunate and hopeful development. It seems to be due in part to deliberate government policy which has discouraged mass migration to the cities, but also in part to the spirit and nature of the people themselves. The Saudis have avoided--thus far--the problem of a mass migration from impoverished hinterlands to the accumulated misery of disorganized shack-strewn urban fringes, swollen and festering with unemployment, squalor, and discontent. This is a social problem in many developing nations, notably India, Indonesia, Egypt, and some of the countries of Latin America.

A sizable and growing proportion of the population of Saudi Arabia is becoming educated, trained, productively employed, and essentially drawn into the modern Western pattern of life. But, by any estimate, this proportion

remains a minority. More than half of the Saudi population is still illiterate, untrained, unproductive, and lacking the barest rudiments of health care and other modern amenities.

However deprived and destitute they are by modern Western standards, the nomadic Bedouins and the sedentary peasants of Saudi Arabia still manage to exist and to remain alert, hardy, self-reliant, and durable. In this, they resemble the primitive tribal people of other lands who eventually adapted successfully to Western civilization: the Scottish and the Welsh Highlanders, the Maoris of New Zealand, the Hawaiians and Fiji islanders of the South Pacific, and the Finns of northern Europe.

Statistics to support such a study as has been undertaken here are admittedly inadequate and sometimes unreliable as well. The lack of census data deprives us of an accurate measure of many of the effects of the development effort in Saudi Arabia. We cannot describe, for example, the true literacy rate or educational level of the population. There simply are no accurate measures, such as are generally available in the developed countries, of economic standards (per capita income, median wages, savings, personal expenditures, etc.) or of health standards such as infant mortality, and the frequency of specific diseases and infirmities. Thus, the precise effects of the government

development effort must be left to subsequent studies. For the present, one may only conclude that the government has made significant efforts to transform Saudi Arabia from a desolate, isolated, and nomadic land into a modernizing state with close links to the outside world.

In 1946, the Arabian Peninsula was still one of the little-known corners of the world, remembered mainly as the scene of a peculiarly bizarre, romantic, and savage episode of World War I, as reported by T. E. Lawrence in his Seven Pillars of Wisdom. Some forty years later, we see Saudi Arabia as an important nation, much involved in international relations on the regional and world scene, as reflected in this quotation from an American technical and business journal:

> ...the dominant and moderate position of Saudi Arabia in the Organization of Petroleum Exporting Countries (OPEC) has been adequately demonstrated and abundantly described in the past year.[1]

As a staunch supporter of the Islamic religion, as a stable monarchy in the tumultuous Middle East, and as a major oil-producing nation, Saudi Arabia has become a significant factor in international diplomacy and world relations.

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[1]J. E. Atkins, "Saudi Arabia: Oil and Other Policies," Oil and Gas Journal, July 19, 1976, p. 103.

Its sudden wealth and immense foreign exchange holdings give it power and influence on the world scene.[2] As indicated in a recent official report, it is now

> a major source of loans, grants, and other foreign aid to developing nations. In 1975, more than three percent of the Saudi GNP was assigned to such aid.[3]

Saudi Arabia and Kuwait are the only oil-rich nations which have sought to match the Western Powers and the Communist bloc in financing Third World aspirations.

It is apparent to anyone familiar with the country over a period of time that the enormous financial resources now available to the government of Saudi Arabia as a result of massive oil exports are bringing major changes to the landscape of Saudi Arabia and the way of life of many of its people. New development projects are beginning to show in all the occupied areas of this huge desert country. So far, nearly all of the industrial development outlays have been concerned with facilities for the further processing and handling of petroleum products, but in the long run the

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[2]Four Measures of World Power, U.S. News and World Report, March 3, 1975, p. 41. Saudi Arabia is third with $14.3 billion in accumulated foreign exchange. West Germany is first with $32.7 billion and the United States is second with $16.0 billion.

[3]Saudi Fund for Development, First Annual Report. Riyadh, 1975, p. 20.

Saudi government will have to turn its attention to even more emphasis on expanding the water supply, fully developing the agricultural and tourist potential, and establishing miscellaneous light industries which can be operated with non-petroleum energy sources, perhaps solar power. It is inappropriate to speculate here as to what Saudi Arabia will be like twenty-five or fifty years hence, but the present rate of change suggests that it will be vastly different, and probably much more Westernized, than it is in 1977.

APPENDIX A

TABLE 1

REGION I - CENTER
DATA FOR TWELVE VARIABLES: 1964-1973

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Labor Employed	33183	33035	34160	--	23765	--	--	--	--	--
Establishments	14705	16627	16627	16627	16627	16627	16627	16627	16627	17627
Coop Societies	17	7	7	12	12	17	17	17	32	36
Schools	363	555	628	658	753	810	847	911	1113	1193
Teachers	2832	3204	4970	5272	6631	7227	7227	8070	9376	9476
Students	56127	78305	100708	112263	132813	149024	155834	169740	199577	196577
Hospitals	20	14	14	14	14	15	15	18	17	30
Hospital Beds	1089	1489	1217	1244	1303	1486	1293	1437	1565	1803
Physicians	--	108	108	224	224	267	273	290	369	469
Pharmacies	2	3	5	9	9	9	7	7	7	17
Pharmacists	--	--	8	8	7	6	8	9	11	13
Road Projects Completed	--	4	3	4	11	14	8	9	6	16
Total Road Length	499	736	1611	1653	2822	3530	3857	4161	4522	4883

TABLE 2

REGION II - WEST
DATA FOR TWELVE VARIABLES: 1964-1973

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Labor Employed	11391	11384	12860	--	--	--	--	--	--	--
Establishments	16866	21853	21853	21858	21856	21856	21856	21856	21856	21956
Coop Societies	--	5	5	6	6	6	8	8	18	24
Schools	304	507	622	668	743	805	805	973	1081	1181
Teachers	3050	3533	5961	6488	7659	8116	8116	9968	11354	12354
Students	82156	120527	140028	153485	179146	195379	195379	246400	267783	277783
Hospitals	26	30	30	30	30	17	17	16	19	29
Hospital Beds	1790	1856	3589	4142	4102	4236	4454	5475	5440	5606
Physicians	--	150	150	270	270	307	314	315	432	532
Pharmacies	4	4	6	5	5	5	7	7	7	12
Pharmacists	--	--	8	7	8	9	9	12	19	28
Road Projects Completed	--	3	3	3	3	3	3	1	4	10
Total Road Length	3	769	1390	2011	2300	2467	2586	2617	2814	2814

TABLE 3

REGION III - EAST
DATA FOR TWELVE VARIABLES: 1964-1973

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Labor Employed	33737	33545	34098	32515	36060	31438	30348	30729	30941	30941
Establishments	8959	7431	7431	7431	7433	7433	7433	7433	7433	7433
Coop Societies	--	1	1	2	2	2	5	5	5	5
Schools	141	255	215	206	226	234	234	278	297	297
Teachers	1500	1859	2055	2031	2237	2414	2414	2582	3679	3679
Students	35242	53003	46237	47155	51954	56115	56115	69158	85109	85109
Hospitals	9	9	9	9	9	7	7	7	7	7
Hospital Beds	329	769	516	521	521	573	573	483	464	561
Physicians	--	43	43	76	76	87	90	96	126	126
Pharmacies	--	--	--	--	--	--	--	--	--	--
Pharmacists	--	--	7	2	2	2	2	2	3	5
Road Projects Completed	--	1	2	2	4	2	3	2	2	2
Total Road Length	5	66	136	168	420	437	657	814	855	855

TABLE 4

REGION IV - SOUTHWEST
DATA FOR TWELVE VARIABLES: 1964-1973

Variables	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Labor Employed	--	--	--	--	3997	--	--	--	--	--
Establishments	6520	5644	5644	5644	5644	5644	5644	5644	5644	5644
Coop Societies	--	1	1	2	2	2	7	7	15	15
Schools	320	414	501	522	592	622	622	763	879	899
Teachers	1931	2107	2686	2873	3390	3670	3670	4318	5207	6207
Students	34739	37935	48320	51256	59040	69043	69043	85865	99704	169704
Hospitals	9	14	14	14	14	6	6	6	6	10
Hospital Beds	204	554	328	347	425	457	523	489	603	790
Physicians	--	32	32	74	74	86	86	87	114	200
Pharmacies	--	--	--	--	--	--	--	--	--	--
Pharmacists	--	--	3	1	--	--	--	--	1	5
Road Projects Completed	--	1	--	--	7	7	10	6	7	17
Total Road Length	--	36	36	36	1775	2299	3004	3222	3678	3678

TABLE 5

REGION V - NORTH
DATA FOR TWELVE VARIABLES: 1964-1973

VARIABLE	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Labor Employed	--	--	--	--	--	--	--	--	--	--
Establishments	8539	5099	5099	5099	5099	5099	5099	5099	5099	5019
Coop Societies	--	3	3	10	10	10	7	7	10	13
Schools	61	89	108	154	192	176	176	208	234	250
Teachers	287	336	547	1035	1165	1108	1108	1191	1469	1669
Students	4947	8139	10539	19108	22337	21516	21516	22047	27536	29536
Hospitals	3	4	4	4	4	2	2	2	2	5
Hospital Beds	50	75	36	45	45	35	30	58	60	110
Physicians	--	8	8	19	19	23	26	29	40	60
Pharmacies	--	--	--	--	--	--	--	--	--	--
Pharmacists	--	--	--	--	--	--	--	--	1	2
Road Projects Completed	--	--	--	1	1	2	2	2	2	--
Total Road Length	--	--	--	33	45	184	184	218	344	--

APPENDIX B

TABLE 1

REGION I - CENTER
PER CAPITA DATA FOR TWELVE VARIABLES: 1964-1974

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Labor Employed	.017121	.017392	.018364	._____	.013329	._____	._____	._____	._____	._____	._____
Establishments	.007586	.008754	.008936	.009127	.009326	.009533	.009750	.009977	.010215	.011094	._____
Coop Societies	.000009	.000004	.000004	.000007	.000007	.000007	.000010	.000010	.000020	.000023	._____
Schools	.000187	.000292	.000338	.000361	.000422	.000464	.000497	.000547	.000684	.000751	._____
Teachers	.001461	.001687	.002671	.002894	.003551	.004144	.004238	.004842	.005760	.005964	._____
Students	.028958	.041227	.054127	.061623	.074490	.085442	.091380	.101852	.122611	.123717	._____
Hospitals	.000010	.000007	.000008	.000008	.000008	.000009	.000009	.000011	.000010	.000019	._____
Hospital Beds	.000551	._____	._____	._____	._____	._____	._____	._____	._____	._____	.001008
Physicians	._____	.000057	.000058	.000123	.000126	.000155	.000160	.000174	.000227	.000295	._____
Pharmacies	.000001	.000002	.000003	.000005	.000005	.000005	.000005	.000004	.000004	.000011	._____
Pharmacists	.000004	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000007
Road Projects Completed	._____	.000002	.000002	.000002	.000006	.000008	.000005	.000005	.000004	.000011	._____
Total Road Length	.000257	.000387	.000866	.000907	.002024	.002262	.002497	.002778	.003073	._____	._____

TABLE 2

REGION II - WEST
PER CAPITA DATA FOR TWELVE VARIABLES: 1964-1974

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Labor Employed	.006187	.005906	.006526	._____	.028660	._____	._____	._____	._____	._____	._____
Establishments	.009161	.011337	.011089	.010851	.010625	.010405	.010196	.010040	.009800	.009658	._____
Coop Societies	._____	.000003	.000003	.000003	.000003	.000003	.000004	.000004	.000008	.000011	._____
Schools	.000165	.000263	.000316	.000332	.000361	.000383	.000376	.000445	.000485	.000519	._____
Teachers	.001657	.001833	.003025	.003222	.003723	.003864	.003786	.004559	.005091	.005434	._____
Students	.044626	.062531	.071054	.076211	.087082	.093018	.091142	.112670	.120073	.122188	._____
Hospitals	.000014	.000016	.000015	.000015	.000015	.000008	.000008	.000007	.000007	.000013	._____
Hospital Beds	.000972	._____	._____	._____	._____	._____	._____	._____	._____	._____	.002466
Physicians	._____	.000078	.000076	.000133	.000131	.000146	.000146	.000144	.000193	.000234	._____
Pharmacies	.000002	.000002	.000003	.000002	.000002	.000002	.000003	.000003	.000003	.000005	._____
Pharmacists	.000004	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000012
Road Projects Completed	._____	.000002	.000002	.000001	.000001	.000001	.000001	.000001	.000002	.000004	._____
Total Length	.000002	.000399	.000705	.000999	.001118	.001175	.001206	.001197	.001262	.001238	._____

TABLE 3

REGION III - EAST
PER CAPITA DATA FOR TWELVE VARIABLES: 1964 - 1974

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Labor Employed	.065520	.062174	.060001	.054459	.057620	.048027	.045874	.043151	.041762	.040201	._____
Establishments	.017540	.013773	.013076	.012446	.011877	.011355	.010877	.010438	.010033	.009658	._____
Coop Societies	._____	.000002	.000002	.000003	.000003	.000003	.000007	.000007	.000007	.000006	._____
Schools	.000276	.000473	.000378	.000345	.000361	.000350	.000342	.000390	.000401	.000386	._____
Teachers	.002937	.003446	.003616	.003402	.003574	.003688	.003533	.003626	.003999	.004780	._____
Students	.068998	.098239	.081361	.078979	.083017	.085725	.082117	.096975	.114875	.110581	._____
Hospitals	.000018	.000017	.000016	.000015	.000014	.000011	.000010	.000010	.000009	.000009	._____
Hospital Beds	.000683	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000782
Physicians	._____	.000080	.000076	.000127	.000121	.000133	.000132	.000135	.000170	.000164	._____
Pharmacies	._____	._____	._____	._____	._____	._____	._____	._____	._____	._____	._____
Pharmacists	.000003	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000006
Road Projects Completed	._____	.000002	.000004	.000003	.000003	.000003	.000004	.000003	.000003	.000003	._____
Total Road Length	.000010	.000122	.000239	.000281	.000671	.000668	.000961	.001143	.001154	.001111	._____

TABLE 4

REGION IV - SOUTHWEST
PER CAPITA DATA FOR TWELVE VARIABLES: 1964 - 1974

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Labor Employed	._____	._____	._____	._____	.002928	._____	._____	._____	._____	._____	._____
Establishments	.004939	.004233	.004200	.004167	.004134	.004102	.004071	.004040	.000009	.003979	._____
Coop Societies	._____	.000001	.000001	.000001	.000001	.000001	.000005	.000005	.000011	.000011	._____
Schools	.000242	.000316	.000373	.000385	.000434	.000452	.000449	.000546	.000624	.000634	._____
Teachers	.001460	.001580	.001999	.002125	.002483	.002668	.002666	.003091	.003699	.004376	._____
Students	.026365	.028453	.035955	.037840	.043247	.050184	.049799	.061461	.070827	.009650	._____
Hospitals	.000007	.000011	.000010	.000010	.000010	.000004	.000004	.000004	.000004	.000007	._____
Hospital Beds	.000683	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000557
Physicians	._____	.000024	.000029	.000055	.000054	.000063	.000062	.000062	.000081	.000141	._____
Pharmacies	._____	._____	._____	.000000	._____	._____	._____	._____	._____	._____	._____
Pharmacists	.000003	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000004
Road Projects Completed	._____	.000001	._____	._____	.000005	.000005	.000007	.000004	.000005	.000012	._____
Total Road Length	._____	.000027	.000027	.000027	.001300	.001671	.002167	.002306	.002513	.002593	._____

TABLE 5

REGION V - NORTH
PER CAPITA DATA FOR TWELVE VARIABLES: 1964 - 1974

Variable	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Labor Employed	._____	._____	._____	._____	.004486	._____	._____	._____	._____	._____	._____
Establishments	.013714	.007817	.007478	.007166	.006880	.006615	.006370	.006143	.005931	.005846	._____
Coop Societies	._____	.000005	.000005	.000014	.000013	.000013	.000009	.000008	.000012	.000015	._____
Schools	.000098	.000136	.000158	.000216	.000259	.000228	.000220	.000251	.000272	.000281	._____
Teachers	.000461	.000515	.000802	.001455	.001572	.001437	.001384	.001435	.001709	.001877	._____
Students	.007945	.012478	.018649	.026855	.030138	.027914	.026881	.026561	.032030	.033212	._____
Hospitals	.000005	.000006	.000006	.000006	.000005	.000003	.000002	.000002	.000002	.000006	._____
Hospital Beds	.000084	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000124
Physicians	._____	.000012	.000012	.000027	.000026	.000030	.000032	.000035	.000047	.000067	._____
Pharmacies	._____	._____	._____	._____	._____	._____	._____	._____	._____	._____	._____
Pharmacists	._____	._____	._____	._____	._____	._____	._____	._____	._____	._____	.000002
Road Projects Completed	._____	._____	._____	.000001	.000001	.000003	.000002	.000002	.000002	._____	._____
Total Road Length	._____	._____	._____	.000074	.000061	.000239	.000230	.000263	.000400	._____	._____

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