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Some issues of regional development and planning in Libya

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/SOME ISSUES OF REGIONAL
DEVELOPMENT AND PLANNING IN LIBYA/

by

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B.A., University of Libya, 1971

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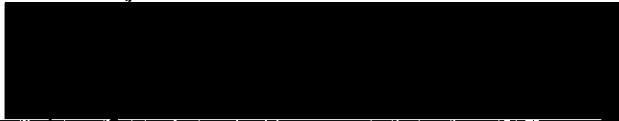
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ABSTRACT

SOME ISSUES OF REGIONAL
DEVELOPMENT AND PLANNING IN LIBYA

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This thesis is primarily concerned with the issues of regional development as they relate to a classic problem of underdevelopment, namely, the dualism of the space economy. The reversal of regional imbalance becomes a complex problem because the polarizing process is historically conditioned and is deeply ingrained into the structural economy. Accordingly, the present study of regional development in Libya started with a historical analysis of the space economy. Understanding of the historical evolution of regional economic relations is essential for the contemporary purposes of formulating development plans for modern Libya.

Against a painful background of poverty resulting from historical influences and geographical constraints, the Libyan economy has experienced the "oil boom" of the Sixties. Since then, Libya has been characterized by a large capital surplus, as it became one of the major oil producing and

exporting nations of the world.

However, despite the abundance of capital the economy still reflects the classic structural traits of underdevelopment, i.e., sectoral imbalance and overdependence on a single product. While the oil industry has been developed extensively, other sectors of the economy remained comparatively less developed. In addition to that, the new oil wealth initiated the following problems: 1) the extension of a modern market economy into the traditional subsistence economy, disrupting the life-styles and the population base of the latter; 2) a widening gap between the rapidly growing modern cities and the stagnation or slow growth in rural areas; and 3) increased rural-to-urban migration.

Given the fact that oil is an extractive economy of a nonrenewable resource, this research stresses the need for regional population policies that would link the exploitation of oil with areally dispersed industrial and agricultural activities. In this respect, population data from 1954 to 1973 were analyzed in order to identify the growing and declining regions. This analysis was supplemented by a spatial analysis of hierarchical service-centers in order to identify the gaps in space and in the hierarchical order. The results of this investigation were used to suggest a settlement policy for northeastern Libya.

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CHAPTER I

INTRODUCTION

This thesis begins with a review of the existing literature on regional development as it relates to a classic problem of underdevelopment, namely, the dualism of the space economy. In the case of Libya, we will analyze the possible impact of the sudden influx of oil revenues on what is a sparsely populated country with a low capital absorption capacity. Specifically, we will examine the population changes resulting from the impact of oil revenues. Finally, we will develop some simple but useful measures for examining the issue of regional population planning in Libya.

The foundations of regional economic disparities in Libya were laid early in the period of foreign domination. Throughout that period the space economy exhibited a marked urban-rural duality. Export-oriented, modern European colonialism stimulated the coastal towns, continuing a trend that had actually started during an earlier period of Roman and Greek influence and conquest. As a result, the interior towns and rural areas declined and their inhabitants never advanced beyond subsistence levels of living.

When Libya became an independent state in 1951, it was considered the prototype of a poor country. There were almost

no known natural resources other than land. The usable area hardly exceeded 5 percent of the total area of the country. Even this area suffered from shortages of water, soil erosion, and poor communication. Per capita income was under \$50 per year, and there was no skilled labor or indigenous entrepreneurship. In general, the level of development was very low.

It is against this background of the historical and geographical forces of the Libyan economic development, that we must view what is commonly called the "oil boom" of the Sixties. Since then, the Libyan economy has been characterized by a large capital surplus, as Libya became one of the major oil-producing and exporting nations of the world.

The effect of the fast growing oil sector on the rest of the economy has been fundamental. It gave rise to an unprecedented flow of revenues accruing to the government with a monopoly on the income. The surplus income enabled the country to adopt planning for conscious economic development so as to rationalize the exploitation of its limited potentialities.

However, despite the abundance of capital, the economy still reflects the classic structural traits of underdevelopment, i.e., sectoral imbalance and overdependence on a single product. More important, the introduction of the new oil wealth added another dimension to the already existing disparities between regions. It has in fact aggravated the

historical urban-rural duality. In particular, it initiated the following problems:

- 1) the extension of a modern market economy into the traditional subsistence economy, disrupting the life-styles and the population base of the latter;
- 2) a widening gap between the rapidly growing cities and the stagnation or slow growth in rural areas;
- 3) increased rural-urban migration.

The purpose of this study is to examine the impact of rapid economic growth on urban and regional development in Libya, in general, and in its northeastern part, in particular. In more detailed terms, the study will attempt to do the following:

- 1) to review the economic conditions in the country before the discovery of oil, and to trace the origins of regional dualism;
- 2) to consider the nature of the economic development during the petroleum period, and how the modern economy has aggravated rather than reduced the disparity between the urban and rural sectors of the economy;
- 3) to examine in detail the pattern of population distribution as a manifestation of the urban-rural dichotomy, referred to earlier, in order that we may suggest some measures for regional population planning.

The latter is accomplished by examining a "transitional diagram" of population change and by investigating some aspects of the service-center hierarchy in northeastern Libya.

CHAPTER II

THEORIES OF REGIONAL DEVELOPMENT

1. An Introductory Note

In the theory of economic development, attention is usually focused on the dual nature of the economies of the developing countries. These economies are usually held to be comprised of two sectors: a traditional sector engaged in subsistence agriculture, and a modern sector based on export and the use of technology. These sectors exist independently, yet side by side, in the developing country.

". . . progress and tradition may dwell in close spatial proximity by simply fastening on different human groups and economic activities that exist side by side."¹ The term "dualism" is used to contrast the various economic and social differences that exist between the backward and more advanced sectors of the developing countries. This concept forms the basis of some of the most important recent theories of the growth process.²

¹Albert O. Hirschman, The Strategy of Economic Development (New Haven, Conn: Yale University Press, 1958), p. 184.

²Robert E. Baldwin, Economic Development and Growth (New York: John Wiley & Sons, 1972), pp. 66-67.

2. The Concept of Regional Inequality

The concept of inequality is essential to an understanding of the spread of economic development in an area. Regions of a country do not develop at the same speed. A few points of growth are first established, from which development spreads over the country. Myrdal,³ supported by Hirschman,⁴ made an important contribution to economic development theory by introducing an emphasis upon regional economic inequalities. According to him, they are generated during the early stages of development through the operation of circular or cumulative causation.⁵ He has devised two terms for this purpose; the "spread effects" and the "backwash effects." These coincide with the effects mentioned by Hirschman; the "trickling-down effects" and the "polarization effects." Myrdal points out that expansion in one locality has backwash effects in other localities:

More specifically the movements of labor, capital, goods and services do not by themselves counteract the natural tendency to regional inequality. By themselves, migration, capital movements and trade are rather the media through which the cumulative process evolves - upward in the lucky regions

³Gunnar Myrdal, Rich Lands and Poor: The Road to World Prosperity (New York: Harper & Brothers, 1957).

⁴Hirschman, op. cit.,

⁵Myrdal, op. cit., p. 12.

and downward in the unlucky ones.⁶

According to Myrdal, the play of the forces in the market normally tends to increase, rather than decrease, the inequalities between regions. If things were left to market forces, unhampered by any policy interferences, economic activities would cluster in certain localities and regions, leaving the rest of the country in a state of stagnation. The expansion of economic development in space is accomplished through certain centrifugal "spread effects" of expansionary momentum, from the centers of economic growth to other regions.⁷ Myrdal links a higher level of economic development in a country with stronger spread effects. He also attributes much of the problem of a low average level of development in an underdeveloped country to the fact that spread effects there are weak, and that the free play of market forces tends to create regional inequalities.⁸

Hirschman (1958) explains the same concept of regional dualism, what he calls the north-south problem.⁹ He points out that once economic progress appears in any area, powerful

⁶Ibid., p. 27.

⁷Myrdal, op. cit., p. 31.

⁸Ibid., p. 34.

⁹Hirschman called "North" the region which has been experiencing growth and "South" the one that has remained behind.

forces tend to operate, making for a spatial concentration of economic growth around the initial starting points.¹⁰ Hirschman stresses the need for the emergence of "growing points" or "growth poles" in the course of the development process. This inevitably leads to an interregional inequality of growth, which establishes the distinction between the "growth points" and the "lagging regions" of the country. According to Hirschman, the gap created between the two is gradually reduced through "trickling down" effects that are favorable for the poor region. This occurs when the richer region starts interacting with the poorer one through increased "Northern" purchases and investments in the "South."

This effect is very likely to occur if a certain degree of complementarity exists between the two regions. However, in the absence of such complementarity, unfavorable or "polarization effects" will tend to be the stronger of the two. These polarization effects take place when the activities in the poor region suffer from the competition of the richer region and the best elements of the labor force of the poor region migrate toward the richer one:

A most serious, and frequently observed, polarization effect consists in the kind of internal migration that may follow upon the economic advances of the North. Instead of absorbing the disguised unemployment, Northern progress may denude the South

¹⁰Hirschman, op. cit., p. 183.

of its key technicians and managers as well as of the more enterprising young men.¹¹

The above theories rely on economic growth from outside.

However, there are some other theories that stress the motive forces of the process of development within a region.

3. Export-base Theory

This theory explains the development of a region through the external demand for its natural resources and activities. The theory has its background in urban economics, or the study of the economic base of a city or region. The economic-base concept implies that the basis for the growth of a region relies on those activities that allow it to pay for its imports. These activities may range from agriculture to transport, or the exploitation of favorable natural resources, such as oil and natural gas supplies. Walter Isard, who associated the regional multiplier analysis with economic base studies, points out that:

The economic-base type of analysis distinguishes between basic (primary) industry and service (nonbasic or residential) industry. . . . the reason for the existence and growth of a region--whether it is a community or a small resource area at one extreme or a huge metropolitan or resource region at the other extreme--lies in the goods and services it produces locally but sells beyond its borders. These "basic" activities not only provide the means of payment for raw materials, food, and

¹¹Ibid., p. 188.

manufactured products which the region cannot produce itself but also support the "service" activities, which are principally local in productive scope and market areas.¹²

North,¹³ and Tiebout,¹⁴ among others, have contributed to the export-base theory. They see that the exploitation of the natural resources of a region will increase its exports. The resulting export surplus will increase its propensity for importation. North has examined the significance of the export base for a region's economic growth and noted that "this growth is closely tied to the success of its exports and may take place either as a result of the improved position of existing exports relative to competing areas or as a result of the development of new exports."¹⁵ He stressed the role of exports in shaping the pattern of urbanization and nodal centers: "Nodes grow up because of special locational advantages that lower the transfer and processing costs of exportable commodities. Nodal centers become trading

¹²Walter Isard, Methods of Regional Analysis: An Introduction to Regional Science (Cambridge, Mass.: The M.I.T. Press, 1960), p. 190.

¹³Douglass C. North, "Location Theory and Regional Economic Growth," in John Friedmann and William Alonso (eds.), Regional Development and Planning (Cambridge, Mass.: The M.I.T. Press, 1964), pp. 240-255.

¹⁴Charles M. Tiebout, "Exports and Regional Economic Growth," in Friedmann and Alonso, *Ibid.*, pp. 256-260.

¹⁵North, *op. cit.*, p. 248.

centers through which exports leave the region and imports enter for distribution throughout the area."¹⁶ The increased imports will stimulate new activities. Thus, a cumulative process will be created, and the continuation of this process will bring about external economies, attracting a new class of industries.

Tiebout pointed out some implications for the theory of regional growth. Although he acknowledged that exports are not the only source of regional income, he maintained that "a region will develop if it can compete with other regions in the exports market . . . it is the ability to develop an export base which determines regional growth."¹⁷ The development process of the region will continue if it can diversify its exports. But, if the natural resources are of the exhaustive type, the development of the region may decline once the resources are exhausted. In addition, there remains the danger of a sudden change in the structure of demand, which will lead to the same result.

Hilhorst¹⁸ added another possible check on the potential effects of the exports sector: "It may be that the socio-

¹⁶Ibid., p. 248.

¹⁷Tiebout, op. cit., pp. 259-260.

¹⁸J. Hilhorst, "Regional Development Theory: An Attempt to Synthesize," in Multidisciplinary Aspects of Regional Development: Annual Meeting of Directors of Development Research Institutes, Montpellier, 1968.

political structure of the region does not allow the multiplier effects to take place, because it imposes an income distribution which is not conducive to the establishment of new industries."¹⁹ Thus, for regional growth to be successful, the economic possibilities for diversification should exist and the socio-political structure should allow for it.

4. The Theory of the Stages of Growth

Others have attempted to outline a more general theory of development.²⁰ Their theory is based on the following premise: as income rises, the proportion of the labor force employed in agriculture declines and the demand for primary commodities goes down. At the same time, the proportion of employment in manufacturing activities rises as new demands arise, especially for products coming from the secondary and tertiary sectors.

The theory states that a regional economy goes through a sequence of stages, from a subsistence economy to the introduction of highly specialized services:

- 1) a stage of self-sufficient subsistence economy;
- 2) growth through production specialization in primary

¹⁹Ibid., p. 26.

²⁰Harvey S. Perloff et al., Regions, Resources and Economic Growth (Baltimore: Johns Hopkins Press, 1960).

- activities and interregional trade--this can be expected to accompany improvements in transport;
- 3) the introduction of "secondary" industries (mining and manufacturing) as well as the necessary social overhead facilities and services to support them;
 - 4) a shift to more diversified industrialization based on internal industrial linkages and rising incomes; and, finally,
 - 5) specialization in certain tertiary industries for export, including the export of capital, specialized personnel, and services to less advanced regions.²¹

The above theory--usually called the "sector theory"--follows the lines established by Rostow.²² He developed a model which suggests that each country passes through a series of comparable stages of development:

- 1) the traditional society
- 2) the preconditions for take-off
- 3) the take-off
- 4) the drive to maturity, and
- 5) the age of high mass consumption.²³

²¹Ibid., p. 59.

²²W.W. Rostow, The Stages of Economic Growth, 2nd ed. (Cambridge, England: Cambridge University Press, 1971).

²³Ibid., p. 4.

The key stage is "take-off," the period during which an economy attains self-sustaining growth. Take-off generally follows the achievements of critical rates of growth in important sectors of the economy. According to Rostow, a society that approaches take-off is a society that has already experienced basic structural changes in its social and political environment:

During the take-off new industries expand rapidly, yielding profits, a large proportion of which are reinvested in new plants; and these new industries, in turn, stimulate, through their rapidly expanding requirement for factory workers, the services to support them, and for other manufactured goods, a further expansion in urban areas and in other modern industrial plants. . . . In a decade or two both the basic structure of the economy and the social and political structure of the society are transformed in such a way that a steady rate of growth can be, thereafter, regularly sustained.²⁴

On commenting on Rostow's stages-analysis, Baldwin noted that although historical experience seems to verify the various sequences suggested by Rostow, there does not appear to be any one stage sequence that applies to a broad sweep of development experience.²⁵ Baldwin also pointed to the inadequacy of the Rostow model in dealing with the dual character of the developing countries. It seems clear that interactions between agricultural and industrial sectors are at the core

²⁴Ibid., p. 8.

²⁵Baldwin, op. cit., p. 79.

of the development process, especially in the transition from a poor and stagnant country to a rapidly developing one. Yet, according to Baldwin, Rostow's theory provides no explicit analysis of these interactions:

From Rostow's theory we get the impression that a country should turn to rigorous industrial development efforts only after agriculture has been modernized and the stock of social overhead capital greatly increased. Yet, postwar growth experience in the developing countries has convinced more and more economists that the agricultural and industrial sectors must expand side by side if growth is to be more than the establishment of a few flashy industries or the creation of an agricultural surplus that soon disappears into a larger rural population.²⁶

However, the stages-theory helps to explain the tendency for urbanization as a result of the specialization of agriculture and a decrease in the relative importance of this sector in the economy of a region. Locational factors, such as transport cost, will stimulate industrial clusters, which will in turn require urban services:

The emerging transport and marketing facilities will converge at points of best access to all production and consumption points in the region and will form urban nuclei there. Regional, political, administrative, and manufacturing functions will be attracted to these nuclei which, according to the diversification of functions and the scale of their market areas, will make up the different levels in the urban hierarchy of the region. At some stage, certain regional activities will become competitive

²⁶Ibid., p. 80.

on the national or international market and will thereby create an additional export base for the region which may accelerate its development relative to others. . . . The emerging urban centers become locations of intensive information exchange and thereby have a higher innovation potential than their hinterlands.²⁷

5. Models of the Development of the Space Economy

John Friedmann views regional theory as the spatial incidence of economic growth. In his book, Regional Development Policy,²⁸ he tries to synthesize and add to the current literature on the subject by stating the following interrelated propositions:

- 1) Regional economies are open to the outside world and subject to external influences.
- 2) Regional economic growth is externally induced.
- 3) Successful translation of the export sector growth into the growth of the residentiary sector depends on the sociopolitical structure of the region and the local distribution of the income and patterns of expenditure.
- 4) Local leadership is decisive for successful adaptation

²⁷Walter B. Stohr, Interurban Systems and Regional Economic Development. Commission on college Geography Resource Paper No. 26 (Washington, D.C.: Association of American Geographers, 1974), p. 12.

²⁸John Friedmann, Regional Development Policy: A Case Study of Venezuela (Cambridge, Mass.: The M.I.T. Press, 1966).

to external change. Nevertheless, the quality of leadership depends on the region's past development experience.

- 5) Regional economic growth may be regarded, in part, as a problem in the location of firms.
- 6) Economic growth tends to occur in the matrix of urban regions. It is through this matrix that the evolving space economy is organized.
- 7) Flows of labor tend to exert an equilibrating force on the welfare effects of economic growth. However, contradictory results may be obtained.
- 8) Where economic growth is sustained over long periods, its incidence works toward a progressive integration of the space economy.²⁹

Of the above eight propositions, two are particularly relevant to the present study. First, "Economic growth tends to occur in the matrix of urban regions. It is through this matrix that the evolving space economy is organized."

Researchers have often noted that the town is the gateway for developing countries: "Cities provide concentrations of population from which industrial labor may be drawn; they also contain a greater variety of skills and resources than do

²⁹ Ibid., pp. 20-38.

rural areas . . . cities typically tend to favor a propensity to analyze traditional institutions and to innovate and accept change.³⁰ Elaborating on the above proposition, Berry added: "Cities organize the space economy. They are centers of activity and innovation, focal points of the transport network, locations of superior accessibility at which firms can most easily reap scale economies and at which industrial complexes can obtain the economies of localization and urbanization."³¹

According to Isard, "urbanization economies," or external economies, result from the juxtaposition of firms:

These are usually defined as economies which emerge when unlike plants congregate around one site, that is, are spatially juxtaposed rather than geographically separated. Frequently these economies are closely linked with regional development processes and may be properly termed urbanization-regionalization economies.³²

Friedmann regarded economic activities as ordered in space through:

³⁰ Irma Adelman and Cynthia T. Morris, Economic Growth and Social Equity in Developing Countries (Stanford, California: Stanford University Press, 1973), p. 21.

³¹ Brian J.L. Berry, "Relationships Between Regional Economic Development and the Urban System--The Case of Chile," Tijdschrift voor Economische en Sociale Geog., vol. 60, pp. 283-307.

³² Isard, op. cit., p. 404.

- a) A system of cities arranged in a hierarchy, according to the functions performed by each city.
- b) The corresponding areas of influence, or urban fields, that surround each of the urban centers in the system.

This system of spatial organization undergoes change with economic growth at any point within it.³³ Friedmann concluded his proposition by presenting several hypotheses that could apply to a uniform area in terms of population, resources, and income distribution:

- a) The population of an urban field will be proportional to the population of the central city; thus large cities will control larger dependent populations, distributed over larger areas.
- b) The spatial incidence of economic growth is a function of distance from a central city; thus, economic growth will be more intense in the proximity of cities.
- c) The growth potential of an area, situated along an axis between two cities, is a function of the density of interaction between them; thus, economic activities will tend to be drawn into an axis roughly in proportion to the product of the populations of each city, divided by some function of the distance separating them.

³³Friedmann, op. cit., p. 30.

- d) Impulses of economic change are transmitted in order, from higher to lower centers, in the urban hierarchy; thus, large cities play a key role in extending growth across the entire system of the space economy.³⁴

The second proposition that is relevant to the present study is the one stating, "Where economic growth is sustained over long periods, its incidence works toward a progressive integration of the space economy." Friedmann devised a descriptive model showing the sequence of spatial evolution in four stages:

- 1) A pre-industrial stage characterized by the existence of a number of small independent local centers.
- 2) A period of incipient-industrialization characterized by primacy, or the domination of the space economy by a single urban region. Friedmann viewed primacy as harmful to the aspirations of the people:

For primate cities tend to feed upon the rest of the nation. Instead of generating a new socioeconomic order and new wealth, they feast on what may be extracted by the sweat of poor, provincial labor. . . . the periphery, therefore, is drained, and national progress will fail to occur, except as it accrues to a small elite of urban consumers at the center.

³⁴Ibid., p. 31.

- 3) During the third stage, the center-periphery structure is gradually transformed into a multi-nuclear structure as investments are focused upon a number of strategically located urban centers. Friedmann regarded this stage as transitional to the final one.
- 4) The final stage is characterized by a functionally interdependent system of cities. Friedmann considered as the major goals of spatial organization during this stage of "organized complexity": national integration, efficiency in the location of individual firms, maximum potential for further growth, and minimum essential interregional balances.³⁵

In agreement with Friedmann's final proposition, Berry added:

It is this full integration of the national space-economy that constitutes the 'modern' end of the development spectrum. Essentially, what growth theory suggests is that continued urban-industrial expansion in major central cities should lead to catalytic impacts on surrounding regions. Growth impulses and economic advancement should 'trickle down' to smaller places and ultimately infuse dynamism into even the most tradition-bound peripheries.³⁶

³⁵ Ibid., pp. 35-37.

³⁶ Berry, op. cit., p. 288.

6. Summary Notes

From the previous review, it is clear that for an understanding of regional development we need to know the nature of the forces working both within and outside the region. The economic growth of a region is affected by its spatial structure, reflected in its physical and activity patterns. These patterns refer to the spatial arrangement of human settlements, productive facilities, transport routes, and land uses. They also include the flows of capital, labor, commodities, and the communications that link the physical elements in space.

CHAPTER III

THE DUAL ECONOMY: A HISTORICAL GEOGRAPHY

1. An Introductory Note

Regional dualism and spatial disparities in growth are common in many countries, especially those belonging to the developing world that are involved in the process of modernization. These two factors may exist at different levels and between different types of areal units: "Spatial disparities may exist . . . between countries (international disparities), between regions of a country (interregional disparities), between different parts of a region (e.g., center-hinterland disparities), or between different cities (interurban disparities)."¹ The effect of these conditions is usually seen in gaps in per capita income and in levels of living between regions, as "development does not affect all parts of a nation equally."²

Building upon the "Kuznets hypothesis," which holds that

¹Walter B. Stohr, Interurban Systems and Regional Economic Development, Commission on College Geography Resource Paper No. 26 (Washington, D.C.: Association of American Geographers, 1974), p. 3.

²John Friedmann, Regional Development Policy: A Case Study of Venezuela (Cambridge, Mass.: The M.I.T. Press, 1966), p. 5.

the level of development and the degree of income inequality are inversely related, Gunther and Leathers stated:

In view of the relatively low levels of average income in depressed areas, together with high rates of poverty and unemployment, it is plausible to expect that these 'depressed regions' also suffer from a greater degree of inequality in the distribution of income. A number of empirical studies have demonstrated that in the case of developing nations and metropolitan areas, income inequality tends to diminish as the level of income rises.³

Economists have long recognized the existence and persistence of regional economic inequalities throughout the historical experience of many nations.⁴

2. The Colonial Experience

2.a. Pre-European Colonization

The foundations of regional economic disparities in Libya have been laid since its ancient history. For nearly three thousand years Libya was subjected to a succession of military invasions that were to continue until the end of the

³William D. Gunther and Charles G. Leathers, "Income Inequality in Depressed Regions: Some Empirical Evidence," Land Economics 2, vol. 1 (May 1974): 176.

⁴See the second chapter of this thesis for a brief review of Myrdal's "spread effects" and "backwash effects," and Hirschman's "trickling-down effects" and "polarization effects."

Second World War. The Phoenicians, who arrived from Lebanon in 900 B.C., founded three commercial centers along the coast of Tripolitania - Leptis, Oea (now Tripoli), and Sabrata. These commercial centers soon became powerful cities, competitors of the other powers of the Mediterranean. The Greeks, the Persians, and the Romans all tried in turn to occupy and influence these cities. They wanted to use them as their bases of operations on the African continent. The Greeks came to Cyrenaica in 700 B.C. They dominated the coast and established their "Pentapolis," or the five cities of Cyrene, Barce, Teuchira, Euesperides (now Benghazi), and Apolonia.

When the cities along the Mediterranean coastline were in strong hands, their influence reached inland to the limits of cultivated land. When they were in weak hands, their influence extended only up to the city gates, and the sands of the desert invaded the fertile lands surrounding them. These successions of outside invaders contributed to the growth of urban life in Libya. However, they also induced the beginning of regional differences and the separation of urban and rural life in the country:

The separation of urban and rural life is an ancient and enduring cultural feature of the Maghreb. In the hierarchy of settlement forms there is a gap between the city and the village, hamlet or farmstead. . . . Urban life has in fact only flourished under the influence of alien invaders--Romans, Arabs, Frenchmen--and

it has been and remains sharply differentiated from rural and tribal ways of life.⁵

The period of Arab domination, which started in 643 A.D., was marked at the beginning by Berber resistance, lasting for half a century, as well as by continuing revolt, disorder, and political uncertainty. As a result of these conflicts and wars, economic conditions in Libya fluctuated. However, the two dominant elements in Libyan culture originated in this period and spread throughout the area--the Muslim religion and the Arabic language. And because original Berber resistance was overwhelmed, the foundation was laid for the social homogeneity of Libya.⁶

2.b. European Colonization

In 1551 the Ottoman fleet captured Tripoli, which "began to emerge as a distinct political entity with claims to urban leadership supported by a small commercial role in the Mediterranean. Its evolving status led inevitably to a polarization of conflict between the sedentary coastal areas, which

⁵D.R. Harris, "North Africa," in B.W. Hodder and D.R. Harris (eds.), Africa in Transition (London: Methuen & Co., 1967), p. 59.

⁶Rawle Farley, Planning for Development in Libya: The Exceptional Economy in the Developing World (New York: Praeger, 1971), p. 33.

came under its influence, and the tribal hinterland."⁷ The Turkish domination over Libya lasted for some 360 years, until the Italians occupied the country in 1911.

Thus, throughout Libya's early history, an urban-rural duality existed. Export-oriented Turkish and Italian colonialism stimulated the coastal cities, as had the Romans and the Greeks earlier. As a result, the interior cities that had provided important trade links with African countries began to decline. Despite the decline in urban population in Turkish times to one quarter its size during the Roman era, the towns continued to exert their economic influence over the rest of the country:

The towns continued to serve as the loci of foreign settlement, as central places for a very circumscribed hinterland, and as break-in-bulk points both for trans-Saharan trade and agricultural exports. The rural areas remained backward, with peasant agriculture near the coast, and nomadic tribes inland; generally they were free from urban dominance.⁸

The people suffered considerable hardship under Ottoman and Italian rule. Education was almost completely neglected.

⁷Jacques Roumani, "Libya and the Military Revolution," in I. William Zartman (ed.), Man, State, and Society in the Contemporary Maghrib (New York: Praeger, 1973), p. 345.

⁸R.G. Hartley, "Libya: Economic Development and Demographic Responses," in J.I. Clarke and W.B. Fisher, Populations of the Middle East and North Africa (London: University of London Press, 1972), p. 316.

Whatever economic development was encouraged, was largely for the benefit of the foreign colonizers, especially the Italians, whose "30-year occupation of Libya represents European colonization at its worst."⁹ There was some expansion of economic activity during the years of the Italian administration. This included: public works, utilities, agricultural development, and land reclamation. And yet, whatever the Italians achieved was at the expense of the Libyans who suffered heavily. As the World Bank Mission to Libya in 1959 noted: ". . . the Libyans paid heavily for what the Italians achieved. They were pushed off some of the best farming land in the country, large numbers of their livestock were lost in the fighting (especially in Cyrenaica), and their traditional industries suffered from competition from Italian producers."¹⁰

2.c. Libya After World War II

At the end of the Second World War, Libya--which had suffered a great deal from the war--ranked very low in the scale of national income. There were almost no known natural

⁹H.B. Sharabi, "Libya's Pattern of Growth," Current History XLIV (January 1963): 41.

¹⁰International Bank for Reconstruction and Development (IBRD), Economic Development of Libya (Baltimore: Johns Hopkins Press, 1960), p. 27.

resources, other than land, and the usable land, about 5 percent of the total area,¹¹ was extremely limited by shortages of water, soil erosion, and poor communications. Human resources were also scarce, and the economy was deficient in virtually every respect.¹²

From 1943 to 1951, Libya was governed by the British, in Tripolitania and Cyrenaica, and by the French in Fezzan. Each of these three regions was governed independently of the others. The financial and economic relations between the three regional economies were similar to the relations between independent states.¹³ Each of the regions had its own system and procedures for exports and imports, its own regulation of internal economic activities, and its own currency. Total national income in 1950 was estimated at no more than 15 million Libyan pounds, of which agriculture contributed the major part.¹⁴

¹¹The total area of Libya is about 680,000 square miles, which makes it Africa's fourth largest country.

¹²Benjamin Higgins, Economic Development, Principles, Problems, and Policies (New York: W.W. Norton & Co., 1959), p. 28.

¹³Bank of Libya, A Brief History of Its First Decade: 1956-1966, Tripoli (no date), p. 10.

¹⁴Ibid., p. 12.

3. The Historical Spatial Structure as a Constraint to Contemporary Regional Development

The several historical transitions that the Libyan economic space has experienced from early settlement to the recent times confirm the model sketched by Friedmann concerning the spatial aspects of the development of nations:

In the course of further occupancy and settlement, spatial differentiation proceeds, as each regional economy acquires its own characteristic patterns in adaptation to external demand and to the local features of climate, topography, and natural resources. Social differentiation may parallel this tendency to ecological distinctness until a number of clearly defined regional complexes evolve. Toward the end of this period, the nation, now liberated from colonial rule, will appear to be composed of a congeries of relatively autonomous regional economies and sociocultural subsystems, each with its own administrative and commercial centers and traditional channels of export.¹⁵

Perhaps the physical and climatic nature of the country is more decisive than any other element in the forming of spatial constraints to regional integration and the maintaining of spatial differentiation between the regions of Libya in the past:

The two more humid enclaves along the Libyan coast are effectively separated by the approach of Saharan conditions to the sea around the desolate shores of the Gulf of Sirte. This desert barrier, some 300 miles

¹⁵Friedmann, op. cit., p. 9.

(480 km) wide, has had a profoundly divisive effect throughout Libya's history. It has always been easier to travel from Tripolitania to Tunisia and from Cyrenaica to Egypt than between the two Libyan provinces and they have indeed often owed separate political allegiance to their respective neighbors.¹⁶

Friedmann sees disequilibrium as being built into transitional societies from the start. He uses the center-periphery (spatial disequilibrium) model to describe the spatial structure of national economies that are in a state of transition to industrialization. In his opinion, "the automatic working of the market does not re-establish a spatial equilibrium but reinforces the initial structural imbalance. Even where equilibrating tendencies persist, a balanced interregional system may require several generations to come into existence."¹⁷ By this statement, he supports Myrdal, who argues that the free functioning of the market mechanism causes most of the more productive forms of economic activity to group themselves in certain localities, thereby increasing the inequalities between regions.¹⁸

This has been the case in the recent history of the Libyan dual economy:

¹⁶Harris, op. cit., p. 47.

¹⁷Friedmann, op. cit., p. 99.

¹⁸Gunnar Myrdal, Economic Theory and Underdeveloped Nations (London: Duckworth, 1957), p. 26.

Libya, in common with all the developing economies, possesses what can be called a dual economy. A modern market economy has been superimposed upon a traditional subsistence economy. The former has its distinctive characteristics, differing in important respects from, say, its modern counterpart in India or from the highly developed British economy. However, in the way it works, the Libyan economy is essentially similar to all market economies.¹⁹

Both Myrdal and Friedmann agree that government intervention and control is essential for development to occur throughout the country.

Hirschman's model of spatial polarization of economies also suggests a widening of the regional gap during the early stages of development. He, too, thinks that governmental intervention is effective in the development of the backward areas within underdeveloped countries.

Friedmann's contention is that regional convergence will not automatically occur in the course of a nation's developmental history. This opinion is in contrast to the supporters of the equilibrium model. They argue that instead of a widening disparity in the rates of factor return and economic growth between center and periphery, a gradual convergence of

¹⁹G. Heitmann, "Libya: An Analysis of the Oil Economy," The Journal of Modern African Studies VII, Vol. 2 (1969), pp. 250-251.

²⁰Albert O. Hirschman, The Strategy of Economic Development (New Haven, Conn.: Yale University Press, 1958), p. 194.

these rates is the norm.²¹

Friedmann cites several reasons for the failure of the world to correspond to the equilibrium theory:

- 1) The failure of diminishing returns to set in at the center.
- 2) The failure to perceive peripheral-investment opportunities.
- 3) The export demand for goods produced at the center.
- 4) The coincidence of the center with the national market.
- 5) The location of quaternary services at the center.
- 6) The heterogeneity of the population.
- 7) The inability of the periphery to make adjustments appropriate to constant socioeconomic change at the center:
 - a. High replacement rates on the periphery.
 - b. Disruptive effects of rapid outmigration.
 - c. Lack of capital.
 - d. Inability and unwillingness to see the regional problem from a national perspective.²²

4. The Breakdown of the Spatial Equilibrium Model in Libya

In the following paragraphs, the nature of these influ-

²¹Friedmann, op. cit., p. 14.

²²Ibid., pp. 14-17.

ences, as they apply to the Libyan case, will be reviewed.

4.a. Rural-Urban Migration

Rural emigration, which is now occurring on a large scale in Libya, was regarded in the past as a temporary means of supplementing low and uncertain agricultural incomes. However, this migration becomes permanent frequently, resulting in serious labor losses in the regions of origin.²³ This drift from the land was happening even before the discovery of oil, but on a lesser scale. It had actually started during the Italian colonization, "where much land was confiscated for colonization, and when employment was available on estates, in the Army, and in constructional works."²⁴ Thus,

²³The following are some of the recent studies on aspects of social change and the effects of outmigration in Libya: Robert S. Harrison, "Migrants in the City of Tripoli, Libya," Geographical Review (July 1967): 397-423; R.G. Hartley, "Libya: Economic Development and Demographic Responses," in J.I. Clarke and W.B. Fisher (eds.), op. cit., pp. 315-347; Frederic C. Thomas, Jr., "The Libyan Oil Worker," Middle East Journal 15 (1961): 264-276, reprinted in I. William Zartman (ed.), op. cit., pp. 439-449; Ragaei El Mallakh, "The Economics of Rapid Growth: Libya," Middle East Journal XXIII, No. 3 (Summer, 1969): 308-320; John I. Clarke, "Oil in Libya: Some Implications," Economic Geography 39, No. 1 (January 1963): 40-59; and J.D. Farrell, "Libya Strikes It Rich," and Robert Wylie Brown, "Libya's Rural Sector," Africa Report, April 1967, pp. 8-18.

²⁴Clarke, op. cit., p. 55.

since the Italian colonization, urban jobs yielded larger incomes than agricultural jobs. Now the disparity has increased "the laborer can earn much more in Tripoli than on the land, and even the lowest-paid city worker often finds it possible to increase his income by holding several jobs at the same time."²⁵

According to Hartley,²⁶ over 600,000 persons in Libya in 1964, nearly 40 percent of the total population, had changed residence during their lifetime. This pattern of interregional migration is typical of the early stages of development. It supports the operation of both Myrdal's backwash effects²⁷ and Hirschman's polarization effects:

A most serious, and frequently observed, polarization effect consists in the kind of internal migration that may follow upon the economic advances of the North. Instead of absorbing the disguised unemployed, Northern progress may denude the South of its key technicians and managers as well as of the more enterprising young men.²⁸

The nomads' and semi-nomads' attitude toward paid labor has recently changed. Once considered undignified, labor for many is now regarded as a good means of personal improvement:

²⁵Harrison, op. cit., p. 404.

²⁶Hartley, op. cit., p. 329.

²⁷Myrdal, op. cit., pp. 23-38.

²⁸Hirschman, op. cit., p. 188.

A new awareness of being unemployed or unprofitably employed is beginning to emerge. This is largely due to the attractive wages which are now being paid. . . . wage labor offers the poorer Libyan freedom from the uncertainties of agriculture and even a certain amount of prestige.²⁹

Although the main motive behind migration has usually been economic, urban attractions and modern city life has also been a stimulus. Migrants from the same region have settled in Tripoli or Benghazi, usually attracting additional migrants, and "the 'pull' is economic as well as social, since the longer-established migrants often arrange employment for the new-comers."³⁰

Education, another city-oriented activity, has also been another reason for migration: "For higher technical or university education students must migrate either to Tripoli or to Benghazi. Education encourages longer absence from home, and a student leaving college finds that the best opportunities for employment are in the city."³¹

Thus, the selective nature of internal migration, which "tends to deprive the periphery of its youngest, most enterprising, and most educated population,"³² is occurring in

²⁹Thomas, op. cit., p. 271.

³⁰Harrison, op. cit., p. 404.

³¹Ibid., p. 405.

³²Friedmann, op. cit., p. 16.

Libya today. As we have seen from the above paragraphs, there has been a continuous movement of young men from the small towns to the big cities. More seriously, these people "comprise many of the educated minority who are attracted by the blandishments of the larger towns and by the opportunities of employment."³³ Harrison also noticed this fact while travelling through the desert oases: "one is immediately impressed by the large proportion of their populations made up of old people and young children, and by the lack of younger men."³⁴

Friedmann thinks that the heavy outmigration from the small communities may deprive its people from adjustments that might otherwise lead to a recovery and to subsequent growth on a sustained basis. Nevertheless, some analysts who studied the migration problem in Libya think the opposite. For example, R.G. Hartley sees migration, despite its disruptive effects, as a necessary element of the normal demographic and economic adjustments to a new equilibrium:

During the period of rapid urban growth, migration was the significant mechanism of demographic change, and a stimulus to reactions in other demographic and economic conditions. Despite the disruptive forces and regional inequalities which it initially provoked, internal migration acted as an instrument of cultural diffusion and social integration.

³³Clarke, op. cit., p. 55.

³⁴Harrison, op. cit., p. 421.

As such, migration was a necessary element of normal demographic and economic adjustment to a new equilibrium.³⁵

Hartley also believes that this large outmigration partially relieved the rural areas of an increasing population on a static resource base: "As such, external human pressures permanently achieved what the environment had been forcing upon the indigenous population for some time."³⁶ And yet, he seems to ignore the fact that the movement of the young men from small towns to the large cities is supplemented by the drift of landless laborers from rural areas.³⁷ This fact, combined with a high natural rate of population increase, leads to high replacement rates on the periphery. The Government is trying, through its development plans and housing programs, to stabilize the rural population by improving opportunities for the people in the hinterland. But, as Farrell has put it, "a stroke of the ministerial pen could not check the movement of people attracted by the oil boom."³⁸

³⁵Hartley, op. cit., p. 329.

³⁶Ibid., p. 317.

³⁷Clarke, op. cit., p. 55.

³⁸Farrell, op. cit., p. 11.

4.b. Urbanization and Economic Opportunities at the Center

Urbanization causes economic activity to concentrate in specific areas, thus creating regional disparities in development and growth potential. The modern economy is situated in the urban industrial centers while the periphery remains less developed, reinforcing the disparities imposed by urbanization. The cities, with their booming construction industries and commerce, have been the main focus of commercial activity and the chief beneficiaries of the oil development. The economies of the villages and provincial towns have been threatened by the flight of capital and labor to Tripoli and Benghazi:

Not only did the urban nuclei of Tripoli and Benghazi become the administrative centers of the oil industry, but more important, they became the receiving centers for the indirect benefits from oil revenues. As trade, transport and service activities grew in conjunction with imports, it was inevitable that the towns would become the foci of the modern sector, being the major ports and domestic markets. With the difficulty of extending the agricultural or habitable area, these trends continued to widen the gulf between the developing and stagnant sectors of the economy.³⁹

According to Clarke, in 1963 Tripoli alone contained two-thirds of the country's industry, while another one-quarter was in Benghazi: "Without directed decentralization, future

³⁹Hartley, op. cit., pp. 318-319.

industrial development will inevitably be localized in the two main cities, as they are the principal markets. Industrialization will merely reinforce the growing duopoly of urban functions."⁴⁰ Thus, a cumulative growth cycle has been set in motion at the center, in contrast to the expectation of diminishing marginal returns to scale.⁴¹

Another feature of the present Libyan economic development is the growth of tertiary and quaternary services (administration, commerce, finance, education, planning, etc.) at the center: "The two cities of Tripoli and Benghazi are far outstripping all other towns. They have taken turns as being federal capital, have accounted for over 90 percent of all maritime trade, and are the only two towns with modern urban amenities."⁴² As Friedmann has put it:

This array of service functions not only acts as a powerful attractive force on modern industry, but turns the center into the core of a permanent technological revolution. This tends to give centrally located enterprises an initial advantage over possible rivals on the periphery and serves further to concentrate capital at or near central locations.⁴³

⁴⁰Clarke, op. cit., p. 58.

⁴¹Friedmann, op. cit., pp. 14-15.

⁴²Clarke, op. cit., p. 53.

⁴³Friedmann, op. cit., p. 16.

4.c. Lack of Capital at the Periphery

Capital scarcity is the main factor leading to the observed wide disparities in the spatial distribution of national income. As for the center, the opportunities for profitable investment have been abundant: "External economies and general benefits derived from agglomeration of capital projects in the relatively rich Northern regions may cause capital to emigrate from the South to the North, tending to accelerate interregional inequality and to widen the North-South schism."⁴⁴

On the other hand, the ability of the periphery to absorb capital is low, that is, in terms of the available investment opportunities that yield a sufficient return to attract capital. In his analysis of the Libyan economy, Heitmann noted that:

The dichotomy between the traditional and modern economies is of critical importance. As would be expected, capital is scarce in the traditional sector of the economy, whose absorptive capacity is low. The lack of an effectively integrated market mechanism--the absence of economic interdependence--can be said to imply this conclusion.⁴⁵

⁴⁴J.G. Williamson, "Regional Inequality and the Process of National Development: A Description of the Patterns," Economic Development and Cultural Change XIII, No. 4, part 2 (July 1965): 6.

⁴⁵Heitmann, op. cit., p. 253.

Little of the investment of wealthy Libyans is directed into peripheral industrial enterprises or the modernization of agriculture. Perhaps the "relative ease of making new investments at the center and their strong preference of enterprises for a metropolitan environment"⁴⁶ encourage them to devote their investments either to speculation in land buying or to the construction of residential buildings in Tripoli and Benghazi.

The rapid growth in educational facilities in Libya will bring an increasing awareness of economic disparities between different parts of the country, "promoted by intensified information flows through modern mass communications media and increased frequency of travel."⁴⁷ It is thus essential, economically and politically, for Libya "to decentralize economic growth and to effect a more widespread distribution of wealth Before migrants lose their ties with their homelands and become firmly rooted in the cities, regional productivity must be revitalized. Deployment of development funds and oil revenues is essential."⁴⁸

In this respect, I quote a reply of an RCC member (Revolutionary Command Council) in answering a question about the

⁴⁶Friedmann, op. cit., p. 15.

⁴⁷Stohr, op. cit., p. 1.

⁴⁸Clarke, op. cit., p. 59.

aims of the revolution in the field of domestic policy: "To carry out a fair division of the resources of the country among the people and to work to destroy the disparities between rich and poor."⁴⁹

⁴⁹"The Libyan Revolution in the Words of Its Leaders," Middle East Journal 24 (Spring 1970): 208.

CHAPTER IV

THE POLITICAL ECONOMY OF OIL

1. Introduction

Until the discovery of oil, Libya had been in poor shape economically and dependent on outside aid. The resources of the country were not adequate to support the construction of those transport and communication links required to unify the country geographically or to create the educational and health facilities needed by the people. The basis for industrialization was almost completely lacking and, in addition to that, the majority of the labor force was unskilled. In general, observers of the Libyan economy before the discovery of oil tended to describe it as "deficient." The balance of trade was in deficit. The federal, provincial, and municipal budgets were in deficit. In fact, the whole economy was operating at a deficit for decades.

The discovery of oil in the country in the late 1950's, and the subsequent exploitation of this resource in huge quantities, generated a sudden transformation. The aim of this chapter is to examine the development of the oil industry and its impact on the rest of the country.

2. Growth of the Oil Economy

2.a. Exploration and the Discovery of Oil

Interest in Libya as a possible source of oil started after the Second World War, when geologists reported thick sections of long-buried marine sediments in Libya.¹ It was not until 1955, after the discovery of oil in the Sahara Desert (in Algeria to the west) provided the evidence that North Africa was an oil-bearing region, that Libya granted concessions to international oil companies for exploration and drilling. Explorational activity started in 1956, following the enactment of the Petroleum Law No. 25 of 1955. It was praised for its foresight: "The most important incentive to oil exploration in Libya, however, derived from the introduction of encouraging legal regulation by the government of Libya almost immediately after independence."²

The government stimulated competition by granting a large number of concessions and distributing them among many compa-

¹Geologically, it is presumed that in prehistoric times Libya was submerged under the ancient Tethis Sea, and that marine deposits of alternating beds of sandstone and shale were left behind by the retreating sea, which later advanced again and left behind new marine and continental sediments--all conditions for the accumulation of oil.

²Rawle Farley, Planning for Development in Libya (New York: Praeger, 1971), p. 115.

nies. A further incentive to exploration was a provision of the Petroleum Law that required the periodic surrender of unexplored areas. Thus, the oil companies were under pressure to explore as much territory as possible before concessions expired:

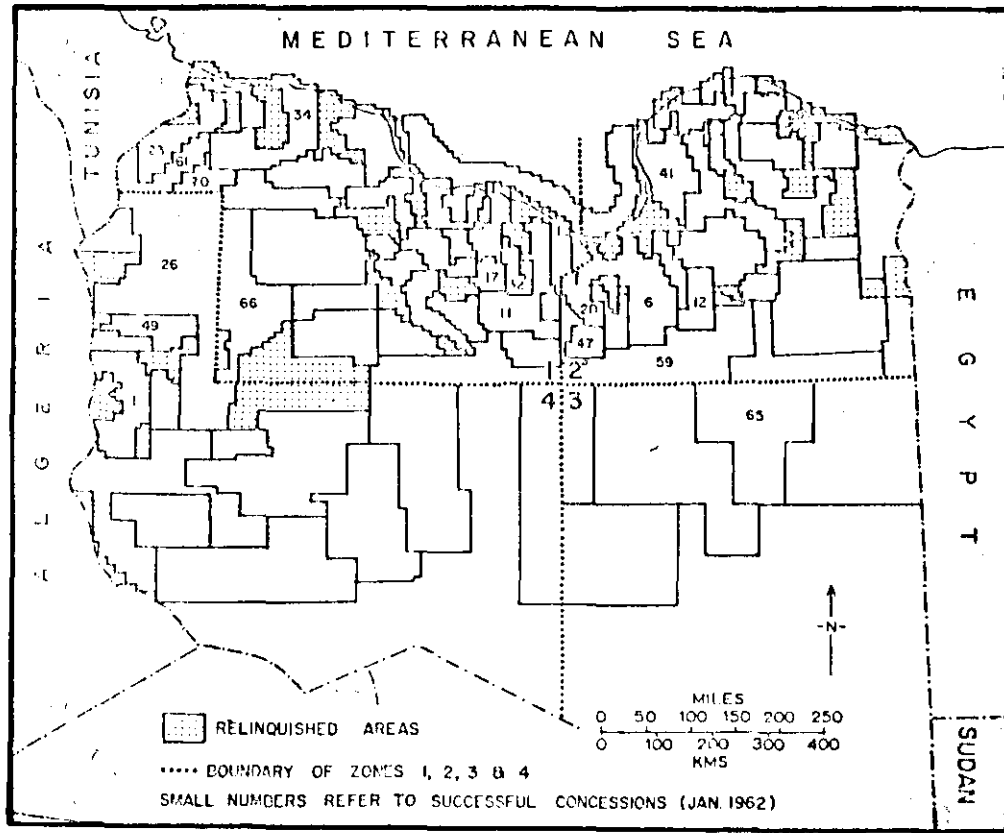
Perhaps the greater incentive for wide-scale development of Libyan oil was the section of the Petroleum Law No. 25 of 1955 which required the periodic surrender of concession acreage. Thus the pressure was to explore all the territory allotted to ensure that none of the lapsed area would have gone unexamined. Companies were required to commence exploration within eight months of the grant of the concession and minimum amounts set for funds to be expended for that purpose. These amounts increased with the lapse of time from the granting of the concession.³

By 1958, 55 percent of the land area of the country was allocated to fourteen international oil companies (see Map 1). According to the Petroleum Law, Libya did not surrender itself as a single concession to one company or a consortium of companies as did Saudi Arabia, which granted all of its operations to ARAMCO.⁴

³Ragaei E. Mallakh, "The Economies of Rapid Growth: Libya," Middle East Journal XXIII, No. 3 (Summer 1969): 310-311; see also The Libyan Review (a monthly magazine published by the Department of Public Relations, Ministry of Information and Culture, Tripoli) XI, No. 4 (April 1967): 18-23.

⁴According to El Mallakh, *Ibid.*, p. 308, the number of foreign oil companies operating in Libya increased to 38 involved in 136 concessions by 1969. "The breakdown on these companies is: 24 American, 6 German, 3 French and one each

MAP 1



**OIL CONCESSION BLOCKS IN
LIBYA: 1961**

SOURCE: JOHN I. CLARKE, 1963

By 1959, oil had been discovered in commercial quantities,⁵ and two years later (October 1961) exportation began, marking the beginning of an important era in Libya's history. Since then, Libya has become a major oil-exporting country, experiencing great economic, social, and political transformations.

2.b. Production, Construction of Pipelines and Oil Terminals, and Exportation of Crude Oil

To bring the crude oil from the Zelten⁶ field to Marsa el Brega, the first oil shipment terminal on the most southerly curve of the Gulf of Sirte,⁷ a 104-mile long, 30 inch

British, Anglo-Dutch and Spanish. It should be recalled that nearly all the production in Africa and the Middle East, Venezuela and Indonesia is handled by eight major international companies. All of them participate in the Iranian Consortium, about 70 percent of Iraqi oil is produced by four of them, four are responsible for 100 percent of Saudi Arabian production (including the Neutral Zone), and two majors in partnership control 90 percent of Kuwayti output."

⁵For a detailed description of the exploring operations undertaken by individual companies, and the first oil discoveries, see the following sources: John Wright, Libya (New York: Praeger, 1969), Chapter 20, pp. 244-258; Rawle Fawley, op. cit., pp. 114-129; and John Clarke, "Oil in Libya: Some Implications," Economic Geography 39, No. 1 (January 1963): 40-59.

⁶Zelten was the first big find and the first to be exploited.

⁷For a detailed story of the evolution of the sea terminal community of Marsa el Brega, see Kamal S. Sayegh, Oil and Arab Regional Development (New York: Praeger, 1968), pp. 122-126.

pipeline was constructed. In 1963, pipelines from the Zelten and Raguba fields delivered 165,000 barrels per day to tanker terminals at Marsa el Brega. Later additions to pumping equipment increased the capacity to over 600,000 b.p.d.⁸ Marsa el Brega sprung up as a new oil town on the coast between Tripoli and Benghazi.⁹ This formerly small fishing village has been turned into a sprawling terminal complex. It is also the site of a refinery and natural gas supplies, which have opened a potential field of development in petrochemicals and fertilizers. Between October 1961 and the spring of 1968, five major oil terminals were opened, giving an average rate of one opening every fifteen months.¹⁰

The second oil terminal, Es Sider, was opened in 1962 and was followed later that year by the third terminal, Ras Lanuf. The former received oil via a 140-kilometer long, 30-inch pipeline from Dahra, Gialo and other southern fields. The latter received the output of the Hofra, Beida, Kotla, and Amal oil fields. In 1965, the fourth terminal, Al Hariga, was opened near Tobruk. A 34-inch pipeline system running for 320 miles linked Serir field with this oil port, which

⁸The Libyan Review, op. cit., No. 10 (October 1966): 20.

⁹Marsa el Brega is 800 km. from Tripoli and 250 km. from Benghazi.

¹⁰Wright, op. cit., p. 250.

is the only one outside the Sirtica system. The largest pipeline (40 inch) was completed in 1968 and was connected with Zueitina, the fifth and last oil terminal on the Mediterranean, at a distance of about 100 miles south of Benghazi (see Map 2).

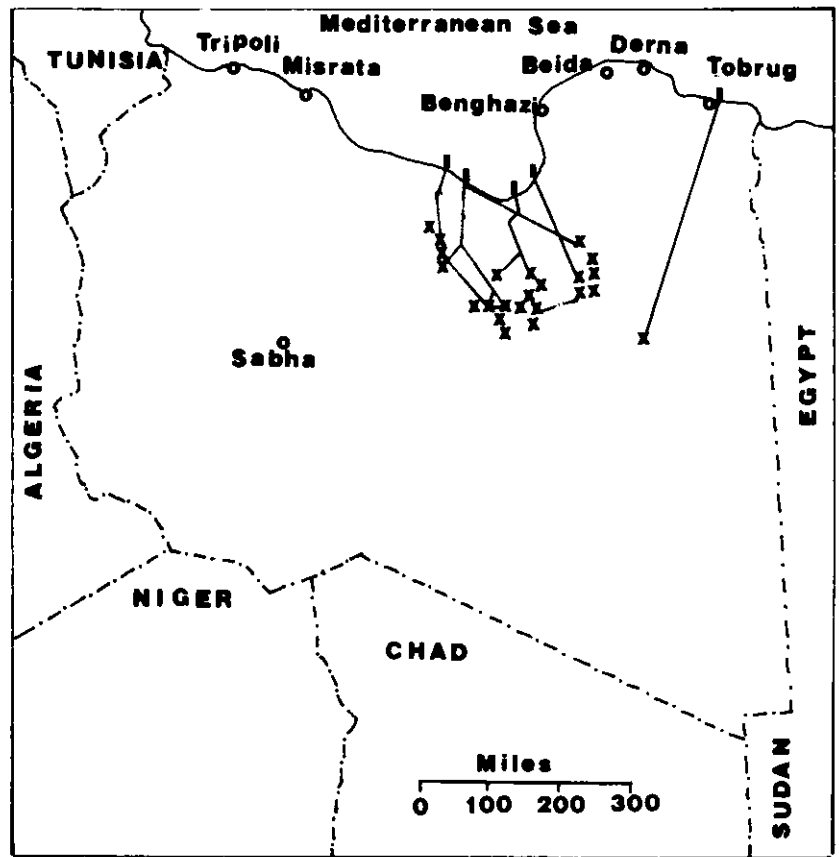
The fast exploitation of the huge oil resources in Libya was remarkable. Production rose from less than a million tons in 1961 to 150 million in 1969, putting the country into third position among the petroleum-exporting countries in the world.¹¹ Also, in terms of reserves, Libya ranked third in world oil reserves in 1967, behind Saudi Arabia and Kuwait (see Tables 1 and 2). Between 1961 and 1968, production increased over 145 times, exports by over 183 times, and accumulated exports reached 401,490 thousand long tons.¹² Even between consecutive years, production increases reached as much as 50 percent. For example, production increased from 684,055 thousand barrels, during 1967/68, to 1,012,436 thousand, during 1968/69. This is approximately an increase of 48 percent. During the same period, exports also increased by 48 percent (Table 3).¹³ The total production

¹¹Peter R. Odell, Oil and World Power: A Geographical Interpretation (London: Cox & Wyman, 1972), p. 82.

¹²Bank of Libya, Thirteenth Annual Report of the Board of Directors, Financial Year 1968-1969, p. 150

¹³Ibid., p. 151.

MAP 2



**MAJOR OIL FIELDS, PIPELINES,
AND TERMINALS IN LIBYA**

—	Oil Pipelines
x	Oil Fields
i	Oil Terminals
o	Cities

TABLE 1

Exploration, Production and Exports of the Libyan Oil: 1961-1969

End of	Companies Included		Concession areas in sq. kms. (000)	Productive Wells	No. of Drilling Rigs	Production During Period (Thousand Long Tons)	Exports During Period (Thousand Long Tons)	Accumulated Exports (Thousand Long Tons)
	Productive	Unproductive						
Dec. 1961	1	21	n.a.	173	36	875	677	677
" 1962	4	18	938.6	271	43	8,763	8,403	9,080
" 1963	7	16	736.8	440	46	21,240	21,540	30,620
" 1964	10	15	727.3	657	45	41,340	40,490	71,110
" 1965	12	10	581.0	823	n.a.	58,656	57,373	128,483
" 1966	14	27	723.0	1,006	21	72,461	66,843	195,326
" 1967	16	27	622.0	1,086	22	83,667	81,783	277,109
" 1968	17	22	628.5	1,164	37	125,292	124,381	301,490
1st Qrt. 68	17	22	n.a.	1,092	32	26,693	26,408	303,517
2nd Qrt. "	17	22	n.a.	1,116	32	31,246	30,741	334,258
3rd Qrt. "	17	22	n.a.	1,144	38	33,043	33,082	367,340
4th Qrt. "	17	22	628.5	1,164	37	34,310	34,150	401,490
1st Qrt. 69	17	n.a.	n.a.	1,197	43	34,741	34,189	435,679
Jan. 1969	17	n.a.	n.a.	1,173	37	11,578	10,830	412,320
Feb. 1969	17	n.a.	n.a.	1,189	43	10,941	11,629	423,949
Mar. 1969	17	n.a.	n.a.	1,197	43	12,222	11,730	435,679

Source: Bank of Libya, Thirteenth Annual Report of the Board of Directors, Financial Year 1968-1969.

TABLE 2

World Oil Reserves, 1967 and 1969
(in billions of barrels)

Country	Oil Reserves	
	1967	1969
Libya	29.2	35.0
Saudi Arabia	74.7	140.0
Kuwait	70.0	68.0
Iraq	23.5	27.5
Abu Dhabi	15.0	
Neutral Zone between Kuwait and Saudi Arabia	13.5	
Algeria	6.9	8.0
Qatar	3.75	
Muscat and Oman	2.5	
Syria	1.5	
U.A.R.	1.4	5.0
Bahrain	0.195	
United States		38.7
Venezuela		14.8
World	414.3	

Source: 1967 figures, Oil and Gas Journal (December 25, 1967).

TABLE 3

Distribution of Production and Exports According to Companies Operating in Libya

Company	Production (000 Barrels)				Exports (000 Barrels)			
	During 1967/68	During 1968/69		% Change to 67/68	During 67/68	During 1968/69		% Change to 67/68
		Quantity	% to Total			Quantity	% to Total	
Esso Libya	234,359	269,801	26.65	15.1	230,923	266,409	26.55	15.4
Oasis	232,318	248,652	24.56	7.0	231,314	248,122	24.73	7.3
Occidental	6,449	188,131	18.58	2,817.2	4,459	185,544	18.49	4,061.1
B.P./ N. Hunt	78,709	111,952	11.05	42.2	80,363	111,518	11.11	38.8
Amoseas	52,320	104,175	10.29	99.1	51,631	101,501	10.11	96.6
Mobil/Gelsin- berg	76,758	87,276	8.62	13.7	78,111	87,126	8.68	11.5
Phillips	1,935	2,392	0.24	23.6	2,153	2,909	0.29	35.2
Pan American	1,205	57	0.01	95.3	921	371	0.04	-59.7
TOTAL	684,053	1,012,436	100.00	48.0	679,875	1,003,500	100.00	47.6

Source: Bank of Libya, Thirteenth Annual Report of the Board of Directors, Financial Year 1968-1969.

of crude oil in 1969 was 1,154,452,000 barrels, and total exports amounted to 1,120,680,000 barrels, yielding a value of 772 million Libyan pounds, or about 2.2 billion dollars.¹⁴

The revenue accruing to the government of Libya from 1962 to 1968 increased over 25 times, from 14.2 million Libyan pounds to 357.8 million (see Table 4).¹⁵ After 1962, oil began to dominate Libyan domestic exports. In 1963, 98.7 percent of the total value of Libyan domestic exports came from crude oil (see Table 5).¹⁶

Europe has been the chief market for Libyan crude, where the major companies have their own refineries and marketing facilities. In 1966, Libya supplied more than 35 percent of West Germany's imported crude, 18 percent of Britain's, and 8 percent of France's. During the fiscal year 1967/68, 72.14 percent of Libya's oil exports went to the countries of the European Economic Community (E.E.C.), and another 12.98 percent went to the United Kingdom. West Germany alone accounted for nearly one quarter of the whole quantity exported during the same period, followed by Italy (22.02

¹⁴Technical Planning Authority, Survey of the National Economy of the Libyan Arab Republic: 1964-1968, p. 81

¹⁵Bank of Libya, op. cit., p. 155

¹⁶Ministry of National Economy, Statistical Abstracts 1963 (Tripoli: Census and Statistical Department).

TABLE 4

Revenue and Expenditure of Oil Companies, 1962-1968
(In Millions L.P.)

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Total Revenue	54.6	118.6	225.5	286.2	360.2	424.8	672.5
1) Petroleum exports	47.0	116.9	216.4	280.3	353.4	415.7	664.3
2) Re-exports	0.6	0.7	1.7	1.1	1.7	1.7	0.3
3) Other Revenue	7.0	1.0	7.4	5.1	5.1	7.4	7.9
Outlays	112.3	144.9	207.6	272.1	325.8	386.1	573.5
Payments due to Libyan Government	14.2	38.5	75.2	125.4	186.7	223.3	357.8

Source: Bank of Libya, Thirteenth Annual Report of the Board of Directors, Financial Year 1968-1969.

TABLE 5

Principal Domestic Exports, 1963

Commodity	Value (in thousands Libyan pounds)	Percentage of Total Exports
Crude petroleum	131,823	98.7
Groundnuts (peanuts)	617	0.5
Hides and skins	257	0.2
Castor oil seed	236	0.2
Wool and other animal hair	123	0.1

Source: Ministry of National Economy, Statistical Abstract 1963
(Tripoli: Census and Statistical Department).

TABLE 6
 Geographical Distribution of Petroleum Exports
 (Quantity in thousands of barrels)

Importing Countries	During 67/68		During 68/69	
	Quantity	% to Total	Quantity	% to Total
1-E.E.C.	490,464	72.14	660,344	65.81
A-West Germany	164,426	24.18	235,613	23.48
B-Italy	149,700	22.02	207,997	20.73
C-France	74,164	10.90	105,087	10.47
D-Holland	65,301	9.61	77,741	7.75
E-Belgium	36,873	5.42	33,906	3.38
2-United Kingdom	88,224	12.98	171,675	17.11
3-Spain	33,624	4.95	62,064	6.18
4-United States	16,935	2.49	62,057	6.18
5-Norway	7,767	1.14	9,601	0.96
6-West Indies	7,445	11.10	9,486	0.95
7-Denmark	12,513	1.84	8,973	0.89
8-Switzerland	4,969	0.73	8,804	0.88
9-Turkey	4,122	0.61	2,951	0.29
10-Rumania	--	--	2,314	0.23
11-Brazil	117	0.02	2,128	0.21
12-Yugoslavia	3,845	0.57	1,456	0.14
13-Ireland	1,039	0.15	570	0.06
14-Sweden	1,899	0.28	482	0.05
15-Canary Islands	--	--	414	0.04
16-U.A.R.	--	--	181	0.02
17-Uruguay	1,388	0.20	--	--
18-Canada	3,127	0.45	--	--
19-Other Countries	2,397	0.35	--	--
Total	679,875	100.00	1,003,500	100.00
Daily Average	1,858	--	2,749	--

Source: Bank of Libya, Thirteenth Annual Report of the Board of Directors, Financial Year 1968-1969.

percent) (see Table 6).¹⁷

Low transportation costs increased the importance of Libyan oil to the economies of all the West European nations. Even with the Suez Canal open, Libya's favorable situation was obvious: the round journey from one of the Gulf of Sirte ports to the south European pipeline terminal near Marseilles is under 2,000 nautical miles; the comparable trip from the eastern Mediterranean terminals is 3,200 miles, and from Kuwait via the Canal is 9,200 miles.¹⁸

2.c. Natural Gas

A common by-product of many oil wells is natural gas.¹⁹ As Libyan crude oil production is accompanied by mass production of natural gas, the quantity of the latter is wholly dependent on the output level of the former. In 1962, an estimated one trillion cubic feet of natural gas was believed to be deposited under the ground at Z elten, with a further five trillion cubic feet at other productive fields. The economic potential of this resource is of great importance. Exporting

¹⁷Bank of Libya, op. cit., p. 153.

¹⁸Area Handbook for Libya, prepared for the American University by Stanford Research Institute (December 1969): 204.

¹⁹In Libya, oil and natural gas occur together, whereas in some areas, separate natural gas deposits have been found.

of natural gas through liquefaction plants makes it an important foreign-exchange earner. Through its utilization as a chemical raw material and fuel, natural gas offers an industrial base for the domestic development of the country.

In 1964, agreements were reached for the supply of 350 million cubic feet per day to Italy and Spain. That year, at a cost of 300 million dollars, work started at Brega on construction of one of the largest 'gas-processing facilities' in the world. The plant, which was opened in January 1969, liquefies the natural gas piped from Zelten by cooling it to minus 260^o Fahrenheit. It is then shipped aboard specially-built refrigerator ships for delivery to Italian and Spanish receiving terminals.²⁰

3. The Impact of Oil on the Libyan Economy and Planned Development

In 1968, oil production increased to more than two million barrels a day. Experts forecasted that in a few years time Libya would possibly become the biggest oil merchant in the world. Daily exports reached three million barrels by 1969, and Libya became the world's sixth largest oil producer and fourth largest oil exporter (see Table 7).

The base of Libya's capital accumulation is oil. It cannot be compared with many other primary commodities,

²⁰Wright, op. cit., pp. 256-57.

TABLE 7

Crude Petroleum Production, 1962-1969: Monthly Averages or Calendar Months
(in thousands of metric tons)

Country	1962	1963	1964	1965	1966	1967	1968	1969 (Oct.)
Libya	732	1,856	3,451	4,865	6,054	6,956	10,462	13,117
Saudi Arabia	312	6,754	7,150	8,419	9,955	10,775	11,750	14,017
Iran	5,484	6,130	7,051	7,844	8,787	10,730	11,713	14,924
Iraq	4,097	4,722	5,136	5,373	5,663	5,018	6,148	6,392
Kuwait	7,681	8,100	8,893	9,087	9,529	9,598	10,165	10,879
Qatar	734	758	844	913	1,154	1,290	1,364	1,535
Indonesia	1,899	1,856	1,910	2,000	1,937	2,109	2,477	
U.S.	30,138	31,000	31,384	32,079	34,097	36,225	37,490	38,449
U.S.S.R.	15,520	17,172	18,634	20,241	22,094	24,006	25,762	29,007
Venezuela	13,929	14,139	14,852	15,201	14,701	15,457	15,767	16,142

Source: United Nations, Monthly Bulletin of Statistics, February, 1970.

particularly agricultural ones, as it is a wasting asset. Few countries in the world have experienced such rapid economic growth as Libya has in the past decade and one half. In 1959, its per capita income was estimated at less than \$50; in 1966 the GNP per capita stood at \$812 as against an average of \$164 for all of Africa (excluding Egypt and the Republic of South Africa). By 1968, it reached \$1,644,²¹ and by now it could be easily computed at well over 2,000 due to the recent increases in crude oil prices in the world.²² Resource exploitation will continue as the major contributor to the rate of growth of Libya's total gross national product and per capita GNP which "stood at 14.6 percent and 10.6 percent respectively--the highest averages not only for developing countries but for all countries."²³ (see Tables 8 and 9)

With its capital based upon the depletion of an asset,

²¹Farley, op. cit., p. 256.

²²For a comprehensive study of the developments in the politics of international crude oil prices, and particularly the pricing of the Libyan crude and the role of the Libyan revolutionaries in this respect, see Taki Rifai, The Pricing of Crude Oil: Economic and Strategic Guidelines for an International Energy Policy (New York: Praeger, 1974), especially the following sections: "The Pricing of Libyan Crude Oils," pp. 89-99, "1970: The Libyan Year," and "Assessment and Consequences of the Libyan Settlement," pp. 249-262, and "The Tripoli Agreement," pp. 270-276.

²³Farley, op. cit., p. 256.

TABLE 8

Estimated Average Annual Growth Rates,
Selected Countries, 1964-1967

Region or Country	Percent Change in Total GNP				Percent Change in GNP Per Capita from Preceding Year				Current Rate of Population Growth
	1964	1965	1966	1967	1964	1965	1966	1967	
Libya	15.4	34.6	16.6	12.6	11.4	29.8	12.5	8.6	3.7
European Developed Countries	6.0	4.0	3.2	2.7	4.9	3.0	2.4	2.0	1.0
United States	5.5	6.3	6.4	2.4	4.0	4.9	5.1	1.3	1.1
Venezuela	9.1	5.1	2.8	5.0	5.4	1.5	-0.7	1.4	3.5
Israel	10.3	8.1	0.4	1.3	5.9	4.4	-2.1	-0.3	2.0
Japan	14.4	3.7	10.7	13.7	13.2	2.5	9.7	12.5	1.0
Portugal	6.9	7.1	2.9	5.7	6.3	5.7	1.6	4.6	1.2

Source: Rawle Farley, 1971

TABLE 9

GNP Growth Rates of Developing
Countries, 1960-1967(Source: Rawle
Farley, 1971.)

Country	1960-1967 Annual % Increase	Per Capita 1960-67 Annual % Increase	Per Capita 1968 (in U.S. dollars)
Libya	19.2	16.0	1,220
Israel	7.6	4.2	1,440
Venezuela	4.6	1.0	1,000
Argentina	2.8	1.2	900
Spain	5.9	5.1	850
Greece	7.5	6.9	850
Chile	4.9	2.4	770
Panama	8.4	5.0	610
Jamaica	4.1	2.1	560
Uruguay	0.4	-1.0	550
Mexico	6.3	2.8	530
Gabon	4.2	3.2	520
Yugoslavia	6.7	5.5	520
Costa Rica	5.9	2.4	450
Peru	6.2	3.2	440
Honduras	5.2	1.8	370
Nicaragua	7.5	4.1	360
Colombia	4.4	1.2	350
Turkey	5.2	1.8	340
Malaysia	5.7	2.5	330
Ghana	2.6	-	320
Guatemala	5.0	1.9	320
Iraq	6.9	3.7	320
Iran	7.9	5.1	310
El Salvadore	6.3	2.7	290
Brazil	4.2	1.2	280
Taiwan	10.0	7.0	280
Dominican Republic	2.9	-0.7	270
Senegal	3.6	1.2	260
Ivory Coast	7.5	5.3	260
Jordan	8.8	6.1	250
Ecuador	4.5	1.1	240
Tunisia	3.8	1.5	230
Egypt	4.7	2.1	200
Morocco	3.2	0.3	180
Ceylon	3.8	1.3	150
Kenya	3.2	0.3	120
Nigeria	4.0	1.6	120
Pakistan	5.7	3.1	100
Sudan	4.1	1.2	100
India	4.1	1.5	80
Tanzania	3.7	1.2	70
Ethiopia	4.7	2.7	70

Libya must make its capital as productive as possible to compensate for and replace the non-renewable resources. W. Arthur Lewis has pointed out that, although development is limited by the extent of a country's resources, other non-economic factors are of equal importance:

For most countries could make better use of their existing resources than they do. Given the country's resources, its rate of growth is determined by human behaviour and human institutions: by such things as energy of mind, the attitude towards material things, willingness to save and invest productively, or the freedom and flexibility of institutions. Natural resources determine the course of development, and constitute the challenge which may or may not be accepted by the human mind.²⁴

The oil industry contributed to the gross national product, foreign exchange, government budgets, capital formation, employment and training of labor, and the supply of fuel and raw materials to the local economy. In addition:

the oil industry also makes an indirect contribution and exercises a certain 'multiplier effect' through its local purchases of goods and services. This often makes it possible for other industries and services to develop and benefit from economies of scale and external economies because of increased demand for local products either by the oil industry or by the recipients of the income generated by the oil industry. Other indirect contributions, such as the supply of oil for local consumption at prices below those prevailing in world markets, the provision of various forms of

²⁴Lewis, W. Arthur, The Theory of Economic Growth, Homewood, Illinois: Richard D. Irwin, 1955, p. 52.

assistance to governments, and the developing of labor skills and entrepreneurial talents, should also be noted.²⁵

The sectoral structure of the Libyan economy exhibits conditions of imbalance in its most severe form. While oil has been developed extensively, other sectors remained comparatively underdeveloped.

Agriculture

Before the discovery of oil, nearly 80 percent of the population lived in the rural and nomadic sectors of the economy. Most of the labor force was engaged in agriculture, which was at the subsistence level, except for some occasionally marketable surpluses in cereals and livestock.²⁶

The traditional agricultural problem has been caused primarily by physical and climatic constraints. The land is arable only in a few regions that lack an adequate supply of water. Everywhere rainfall is both inadequate and unreliable and the interior of the country has virtually no rainfall. Scattered oases have underground water near the surface. The average annual rainfall exceeds 20 inches in only one small area of the Jebel Akhdar (Green Mountains) of Cyrenaica, and even there it is concentrated in a five-month season.²⁷

²⁵ Issawi, Charles, and Yeganeh, Mohammed, The Economics of Middle Eastern Oil, New York: Praeger, 1962, p. 142.

²⁶ Allan, J.A., et. al., Libya: Agriculture and Economic Development, London: Frank Cass & Sons, 1973, p. 9.

²⁷ Brown, R.W., "Libya's Rural Sector," Africa Report, April 1967, p. 16.

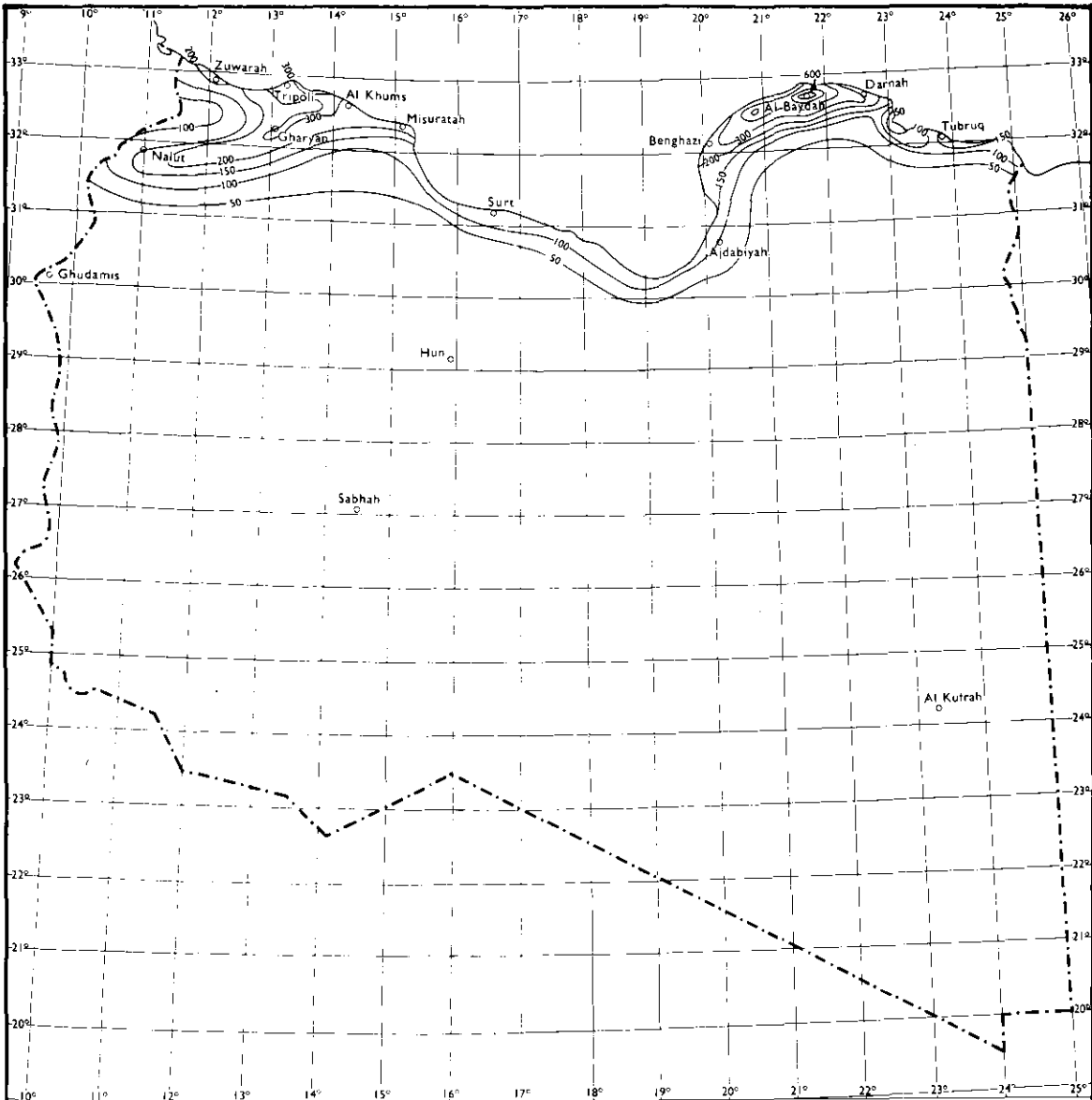
In addition to the scarcity of rainfall, the soil is poor in most areas. Only the Jebel Akhdar and the coastal belt, west of Tripoli and the central Jefara enjoy better soils. (see Maps 3 and 4) In 1959, the World Bank Mission to Libya described agriculture development as presenting a number of challenging problems:

Given the sparsity and irregularity of rainfall and the impoverishment of the soil through many centuries of neglect, large investments are needed in measures of soil and water conservation simply to preserve the existing assets and to prevent a further deterioration in farming conditions.²⁸

About 17.3 percent of the money allocated for the First Five-Year Plan, 1963-1968, was devoted to the development of agriculture. This was spent on agriculture settlement, agriculture marketing, the development of water resources and soil conservation, agriculture machinery, etc. (see Table 10) Despite the size of the allocation for agriculture, external observers noted that agriculture could absorb the funds reserved for the whole Plan (169 million Libyan pounds), without showing much immediate return.²⁹ In addition to the many physical constraints facing agricultural development, there were other inhibiting factors, such as land ownership, defects in marketing and transportation facilities, educational

²⁸International Bank for Reconstruction and Development (IBRD), Economic Development of Libya, Baltimore: Johns Hopkins Press, 1960, p. 18.

²⁹The Economist, (London, June 12, 1965), p. 1323.

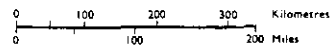


ISOHYETS IN MILLIMETRES

RAINFALL IN LIBYA

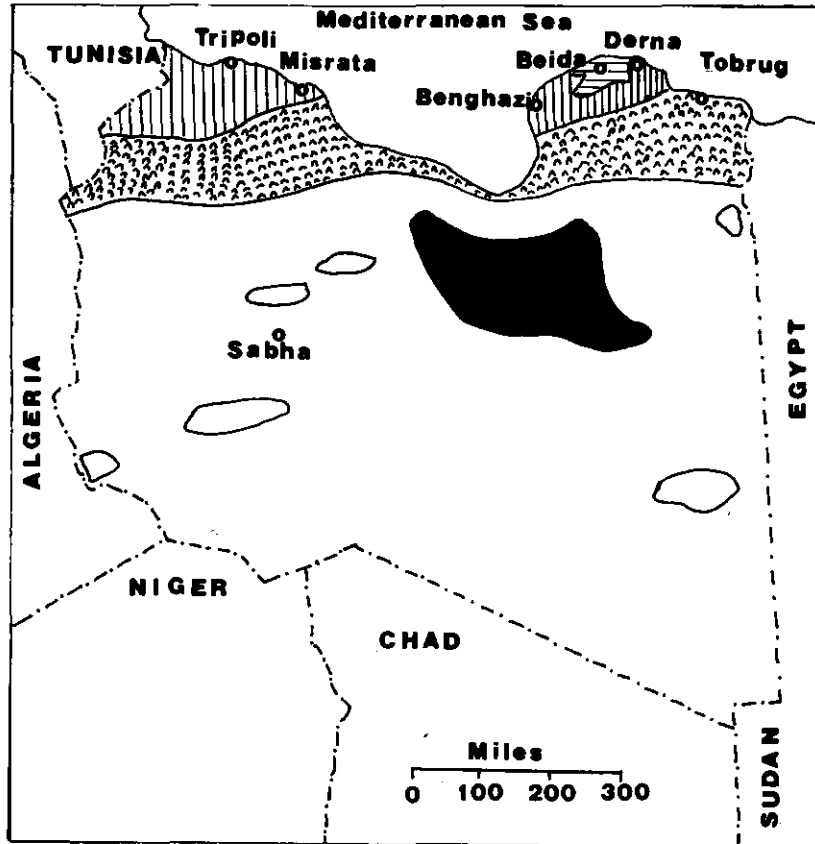
SOURCE: J. A. ALLAN, 1973

After A. Fantoli



INTERNATIONAL BOUNDARIES NOT AUTHENTICATED

MAP 4



**ECOLOGICAL ZONES OF
LIBYA**



Intensive Agriculture



Desert



Wooded Areas



Oases



Grazing Lands



Oil

TABLE 10

First Five-Year Plan 1963-1968
Summary Program for Agriculture

Project	Estimated Cost (in thousands of Lybian pounds)
1. Agriculture settlement	10,000
2. Agriculture marketing	3,500
3. Development of water resources and soil conservation	3,500
4. Heavy and light agricultural machinery	2,500
5. Forest and range development	2,000
6. Animal health development	1,500
7. Agricultural extension	800
8. Horticulture	500
9. Plant disease and pest control	400
10. Agricultural research and experiments	700
11. Agriculture statistics	75
12. Agriculture credit	3,800
Total	29,275

Source: Ministry of Planning and Development, Five-Year Economic and Social Development Plan, 1963-1968 (Tripoli, Ministry of Planning and Development), p. 77.

backwardness among farmers, shortcomings in credit facilities, and inadequate organization of agriculture.³⁰

After the discovery of oil, a serious manpower shortage was added to the existing farming problems. This arose from the migration of the rural population to the cities, oil fields, and construction sites in search of higher wages.³¹ As a result of the rural-urban migration, farms and oasis-gardens were neglected, the number of livestock diminished, and the land reclaimed from the desert was again threatened by sand. Unless the rural population can be encouraged to remain in the countryside, Libya could become a country dependent on a single diminishing resource. However, this can only be achieved when "profits from farming are competitive with other forms of employment."³²

Industry

The state of the industrial sector (excluding oil) did not differ very much from the backward state of the agricultural sector. Industry had its share of constraints that had limited its development since the beginning of Libya's

³⁰For a detailed discussion of these problems, see the (IBRD) Report, op. cit., pp. 130-142.

³¹See Chapter II of this thesis for a discussion of the effects of rural-urban migration.

³²Brown, R.W., op. cit., p. 18.

independence. Libya's domestic market was small because of its limited population and its uneven distribution among the main settled regions, separated from each other by large uninhabited areas.

The World Bank Mission to Libya, in 1959, noted that "Social and economic differences between the nomadic, the settled rural and the urban populations and the considerable differences in their purchasing power and patterns of consumption have further split up the market, restricting the scope for large industrial units and narrowing down the range of products for which local manufacturer is economic."³³ Power and fuel resources were limited and raw materials were confined to a few and irregularly supplied agricultural resources. There were a few mineral resources that could be developed, such as natron deposits in Fezzan and deposits of potash in the Sirte Desert near Marada. Transportation facilities were inadequate, and local management, capital, entrepreneurship, and skilled labor remained largely in short supply.³⁴

The future of industry in Libya will be influenced by developments in both the oil and the agricultural sectors. Local oil and natural gas production will provide a cheaper source of fuel for industry as a whole as well as a potential

³³ (IBRD), op. cit., p. 180.

³⁴ Farley, Rawle, op. cit., p. 139.

source of raw materials for the manufacture of chemicals and fertilizers. The expansion of agricultural sector is needed to supply raw materials for the processing industries, and because increased farm income will provide a larger market for manufactured goods.³⁵

Communications

Communications were in a state of backwardness at the end of the second World War. The communication complex had suffered great damage, as well as many years of neglect. The first Five-Year Economic and Social Development Plan recognized that communications were vital to the development of agriculture, industry, and commerce. The Communication sector, therefore, received almost the same share as the agriculture sector from the allocations of this Plan (over 27 million pounds). This was spent on roads, telecommunications, ports and lights, civil aviation, and meteorology.³⁶ The size of the country and the scattered nature of the population were the main difficulties traditionally confronting Libya in the field of communications.

c. The Evolution of Libyan Development Planning

The evolution of modern economic planning in

³⁵ (IBRD), op. cit., p. 182.

³⁶ Ministry of Planning and Development, Five-Year Economic and Social Development Plan: 1963-68, Tripoli.

Libya³⁷ can be traced back only as far as the years of the Italian occupation, since the country was continuously poor during its previous history. Some planning did emerge under the Italian administration, for public works, utilities and agricultural development, but the extent and direction of these developments were made for the benefit of the Italians alone and at the expense of the Libyans.³⁸

The post-independence period of economic growth was clearly desperate. It depended primarily on external aid that was "vital for the containment of further economic decline."³⁹ Thus, with the help of the United Nations, all the resources necessary for the development of Libya, during its early years of independence, had to come from abroad.⁴⁰ For example, the six-year plan of 1952-58 was made possible by foreign aid granted to and administered by the Libyan government.⁴¹ Until the discovery of oil, therefore, the

³⁷ For a detailed discussion of the evolution of economic planning in Libya from the pre-independence period to the initiation of Libya's first five-year planning program, see Rawle Farley, Planning for Development in Libya, New York, Praeger, 1971, pp. 161-203.

³⁸ International Bank for Reconstruction and Development, Economic Development of Libya, Baltimore: Johns Hopkins Press, 1960, p. 27.

³⁹ Farley, Rawle, op. cit., p. 163.

⁴⁰ According to Higgins, Libya "has become a pilot plant for a large-scale program of technical and capital assistance in which the UN, the United States, the United Kingdom, France, and Italy are all participating," Benjamin Higgins, Economic Development, Principles, Problems, and Policies, New York: W.W. Norton & Co., 1959, p. 37.

⁴¹ Ibid., (1968 edition) p. 821.

Libyan economy clearly survived through foreign aid. Since the early 1960's, oil revenues have relieved Libya of financial dependence on foreign governments and enabled the country to finance developmental planning. Libya introduced its First Five-Year Economic and Social Development Plan for the years 1963-1968. The plan called for an expenditure of about 170 million Libyan pounds for the same period.⁴²

The Aims of the first five-year plan were:

- (1) To ensure the rapid improvement of the standards of living of the people, particularly those of limited income who did not benefit from the economic prosperity.
- (2) To give special consideration to the agricultural sector, being the source of supply of most of the essential consumer goods, besides being the source of income and employment for the majority of the people; to pay attention to industry; to improve the productive efficiency of farmer and laborer; and to encourage the private sector to make investments in these fields.
- (3) To permit the public sector to continue its investments in such services as education, health, communications and housing,

⁴² Ministry of Planning and Development, Five-Year Economic and Social Development Plan 1963-1968, (Tripoli: Ministry of Planning and Development).

together with the other sectors required to consolidate the basic elements needed for a rapid economic growth.

- (4) To develop rural areas by establishing all the productive and public service projects, thus ensuring regular employment for countrymen, and utilizing their productive faculties and raising their incomes in such a way, as to achieve justice in the distribution of national income and restriction of their migration into the cities.
- (5) To organize the imports policy so as to avoid importation of all goods that can be produced in the country on the one hand, and to ensure protection from the danger of inflation and the provision of sufficient supplies of the capital goods needed for development on the other; at the same time to strive to step up local production and to adopt an appropriate customs policy for its protection, in this way gradually and continuously substituting locally produced goods for imports.

- (6) To take such monetary, financial, and commercial measures -- all in a coordinated effort -- as may be necessary to ensure increased revenue, and to enforce tight-belt control on expenditures.
- (7) To take steps to meet the lack of information and statistical data that are necessary for planning, by strengthening the existing statistical organs as well as by studies and research work.⁴³

The tremendous development in the oil sector and the accumulation of oil revenues enabled the country to allocate LD. 1156 million (about 4 billion dollars) for the Three-Year Development Plan 1972-1974.⁴⁴ The Plan has had a far-reaching effect in activating the national economy and its various sectors. It was devised to bring about a change in development strategy:

It aims to restrict production of crude oil to the limit technically and economically required, and directing a large part of oil revenues to productive sectors, mainly agriculture and industry so as to achieve

⁴³Ministry of Planning and Development, op. cit., pp. 50-51, see also Rawle Farley, op. cit., pp. 198-200.

⁴⁴Central Bank of Libya, Economic Bulletin, Published by the Economic Research Division of the Central Bank of Libya, September-December 1972.

equilibrium and diversification sources of income in the national economy, and lessen the semi-total dependence on the oil sector. The plan aims at raising real total production of the non-oil economic activities by 35.6 percent.⁴⁵

A look at the distribution of the gross domestic product from table 11 shows that petroleum mining accounted for 62.1 percent in 1969. Agriculture, forestry, and fishing contributed 3.1 percent. The imbalance is apparent in the fact that the contribution of manufacturing combined with agriculture accounted for only 4.8 percent of the GDP.⁴⁶ From the distribution of the population by economic sectors in 1964, we find that agriculture represented the largest single sector, with 145,000 persons employed, followed by services that employed 84,900 people. Construction absorbed the third largest number of workers. According to 1968 estimates, 51,400 workers or about 11.7 percent of the total labor force were employed in construction. Estimates of the same year showed a decline in the percentage engaged in agriculture, from 39.8 in 1964 to 32.5 in 1968. Manufacturing ranked fourth, followed by commerce and transport (see Table 12).

Thus, while the oil industry (included under mining and quarrying in Table 12) is the leading sector in contribution to the gross domestic product, and is responsible for most of

⁴⁵Ibid., p. 130.

⁴⁶Technical Planning Authority, National Accounts of the Libyan Arab Republic: 1962-1969.

TABLE 11

Gross Domestic Product and National Income of Libya
(in millions of Libyan Pounds)

Industrial Classification	1962	%	1969	%
Agriculture, forestry and fishing	14.9	9.6	37.4	3.1
Petroleum mining	38.0	24.4	754.7	62.1
Other mining and quarrying	0.6	0.4	1.4	0.1
Manufacturing	9.0	5.8	20.8	1.7
Construction	10.3	6.6	86.6	7.1
Electricity and gas	0.9	0.6	4.0	0.3
Transportation and communication	8.6	5.5	40.2	3.3
Wholesale and retail trade	14.2	9.1	48.5	4.0
Banking and insurance	1.7	1.1	7.9	0.6
Public Administration & defense	15.5	10.0	86.8	7.1
Educational services	5.0	3.2	32.3	2.7
Health services	2.1	1.4	13.2	1.1
Ownership of dwelling	29.4	18.9	70.2	5.8
Other services	5.3	3.4	11.8	1.0
GDP at factor cost	115.5	100.0	1215.8	100.0

TABLE 12
Persons Gainfully Occupied 1964 and 1968

Industry	1964		1968	
	Adjusted Census Number	Percent	Estimates Number	Percent
Agriculture, etc.	145,400	39.8	143,000	32.5
Mining & Quarrying	14,800	4.1	18,800	4.3
Manufacturing	30,200	8.3	37,200	8.4
Construction	32,400	8.9	51,400	11.7
Electricity, water	6,300	1.7	7,800	1.8
Commerce	27,800	7.6	32,400	7.4
Transport, communic.	23,500	6.4	36,500	8.3
Services	84,900	23.2	112,800	25.6
Total	365,300	100.0	439,900	100.0

Source: Technical Planning Authority, Survey of the National Economy of the Libyan Arab Republic, 1964-1968.

government revenues and export earnings, it is the least important sector in employment, absorbing less than two percent of the total labor force;

While the discovery and production of oil in Libya has served to quicken the drift of labor from the rural areas to the cities, the petroleum industry itself can absorb directly only a small portion, as it is capital-intensive. The number of employment opportunities is limited, with the highest labor requirements exercised during the primary stage of exploration. The industry and its contractors will be unable to provide work for more than five percent of the labor force in the foreseeable future, even allowing for the establishment of oil-based industries. In 1966, less than two percent of the labor force was directly employed in the oil industry.⁴⁷

Rostow (1962) has examined the relationship between economic growth in general, and economic growth in the particular sectors of an economy. Looking from a historical perspective at the growth patterns of different economies, he arrived at two facts:

1. Growth rates in the various sectors of the economy differ widely over any given period of time;
2. In some meaningful sense, over-all growth appears to be based, at certain periods, on the direct and indirect consequence of extremely rapid growth in certain particular key sectors.⁴⁸

⁴⁷ El Mallakh, Ragaei, op. cit., p. 314.

⁴⁸ Rostow, W.W., The Process of Economic Growth, New York: W.W. Norton, 1962, pp. 261-62.

Rostow cited several examples of the classic sequence of leading sectors. The cotton industry sustained overall British growth from 1780 to 1840, and later, steel, chemical, electrical, and light-engineering products all performed the role of the leading sector. The position of the railroads in the United States "were the instrument for launching the American industrial evolution, yielding as it did a modern centralized iron industry, and ... steel industry."⁴⁹ Rostow stated that the role of leading sectors in carrying forward such sequences is not confined to the major industrial economies. It also is observed in the more specialized economies that depend on exports:

They may be based on the effective exploitation of natural resources, in relation to the requirements of the world market, as well as on a succession of breakthroughs in the application of science to economic purposes.⁵⁰

Perhaps for Libya, the sectoral leadership of oil is without precedent in any other economy - with the exception of some Middle Eastern oil-producing nations. The oil sector's dominance over the rest of the economy is even more striking given the country's traditional agricultural base. The situation in Libya resembles, with some exceptions, the case of Kuwait. Ragaai El Mallakh, in a study of the economic development of Kuwait, observed that there are three

⁴⁹Rostow, W.W., op. cit., p. 262.

⁵⁰Ibid., p. 263.

conditions necessary for improving the sectoral imbalance; First, that the country has at its disposal the technological innovations evolved by the major advanced countries through their development; Second, that the capital surplus could facilitate the application of these technological advances by obtaining the equipment and services necessary; Third, that the oil sector encompasses more than the "primary" element of supply, yielding a growth rate that could be higher than that of other sectors, through innovation and advances in technology:

In short, if a country is to have its economic growth advanced by a pronounced sectoral imbalance, then oil is one of the strategic sectors for leadership because additional units of investment will give the maximum increase in output. Theoretically, concentration on a leading sector may well drag along other sectors as increases in real income occur. This might lead to the ultimate development of the slower growing sectors. The Kuwaiti experience illustrates this trend.⁵¹

4. Problems of Balanced Growth

4.a. An Introductory Note

Balanced growth means the achievement of a state of equilibrium in growth by spreading its benefits throughout the society. In this study, our interest in balanced and

⁵¹Ragaei El Mallakh, Economic Development and Regional Cooperation: Kuwait (Chicago: The University of Chicago Press, 1968), p. 19.

unbalanced growth strategies concentrates on the relationship between the different sectors of the economy as well as on "the major social problems that might arise from undertaking them and the political regime and administrative systems they presuppose."⁵²

4.b. Balanced Growth Theory

Proponents of a balanced growth theory emphasize the need to keep the different sectors of a developing economy in step in order to avoid supply and demand difficulties. To make development possible, therefore, it is necessary to advance on many domestic fronts at once. Nurkse considered the narrowness of the market and the lack of demand and productivity as obstacles to growth in the developing areas: "The difficulty . . . is due above all to the inevitable

⁵²Warren F. Ilchman and Ravindra C. Bhargave, "Balanced Thought and Economic Growth," in Charles K. Wilber (ed.), The Political Economy of Development and Underdevelopment (New York: Random House, 1973), p. 26. (The authors made certain assumptions about the social system and its response to economic change: "First, the population is increasingly 'mobilized,' i.e., a population shifting to wages and a more complex division of labor, exposed to mass media and increasing education, and more easily susceptible to new forms of organization. Second, extreme inequalities of income, inflation over a long period of time without redistribution, and accelerated urbanization without adequate social overhead expenditures and provision for the maintenance of primary group relationships or acceptable alternatives are destabilizing to a social system." Ibid., note 3, p. 42.

inelasticity of demands at low real-income levels. It is in this way that lack of buying power cramps the inducement to invest in any individual industry."⁵³ In order to stimulate investment, Nurkse argued, it is necessary to expand the size of the market:

The difficulty is not present, however, in the case of a more or less synchronized application of capital to a wide range of different industries. Here the result is an overall enlargement of the market and hence an escape from the deadlock. People working with more and better tools in a number of complementary projects become each other's customers. . . . This basic complementarity stems, of course, from the diversity of human wants."⁵⁴

4.c. Unbalanced Growth Theory

In contrast to the balanced growth thesis, Hirschman argues for "unbalanced growth" as a starting point in mobilizing latent resources. In his opinion, "growth is necessarily unbalanced. . . . In analyzing the process of unbalanced growth, we could always show that an advance at one point sets up pressures, tensions, and compulsions toward growth at subsequent points."⁵⁵ Hirschman strongly disagrees

⁵³Ragnar Nurkse, "Some International Aspects of the Problem of Economic Development," in A.N. Agarwala and S.P. Singh (eds.), The Economics of Underdevelopment (London: Oxford University Press, 1958), p. 257.

⁵⁴Idem.

⁵⁵Albert O. Hirschman, The Strategy of Economic Development (New Haven, Conn.: Yale University Press, 1958), p. 184.

with the "balanced growth" doctrine and criticized it especially from its demand and supply sides:

My principal point is that the theory fails as a theory of development. Development presumably means the process of change of one type of economy into some other more advanced type. But such a process is given up as hopeless by the balanced growth theory which finds it difficult to visualize how the 'underdevelopment equilibrium' can be broken into at any one point."⁵⁶

Hirschman believes that the exponents of balanced growth failed to recognize that developing countries lack the necessary resources to start their development in a balanced way; "How many a Western traveler to an underdeveloped country has been bewildered and dismayed by the ubiquitous poverty and inefficiency, by the immensity of the task, and by the interlocking vicious circles!"⁵⁷ Thus, Hirschman favors disequilibrium, and his model is devoted to the task of devising a policy for sustaining a process of economic transformation. Over time, he argues, imbalances will tend to be restored through a variety of market and non-market forces: "It is our contention that nonmarket are not necessarily less 'automatic' than market forces."⁵⁸

Commenting on Hirschman's ideas of "controlled imbalance,"

⁵⁶Ibid., pp. 51-52.

⁵⁷Ibid., p. 52.

⁵⁸Ibid., p. 63.

Friedmann adds:

Hirschman is fully aware that the economic system must not stray too far from the main path; where the gap in economic development between center and periphery is gaining, he favors a policy that will reverse the trend to regional divergency by establishing, within the periphery, new core regions and consequently a new set of spatial imbalances. Implied is the progressive extension of a system of cities into the periphery as the optimum path of national development."⁵⁹

4.d. Libya's Prospects for Adopting an Economic Strategy for Growth

The problem is what type of economic strategy--balanced versus unbalanced--should an economy, such as Libya's, adopt in order to achieve the efficient use and optimum allocation of its resources? This is not an easy question and statesmen and policy makers should answer other questions before attempting to select an economic strategy for their countries. Some of these are questions asked by Friedmann:

Which set (of regions) is to be balanced?
 What should be balanced? Is it total investment in the aggregate or in each sector? ...
 Is it investment divided by population, families, or unit area? Is a balance to be achieved by having all regions grow at equal rates? Or should poor regions grow at a faster rate to allow them to catch up with regions that are better off? Is balance expressed in average income per family so that eventually all regions will be approximately equal in this respect? How is the policy maker to know

⁵⁹ John Friedmann, Regional Development Policy: A Case Study of Venezuela (Cambridge, Mass.: The M.I.T. Press, 1966), p. 50.

when he is perched on the narrow edge of optimal imbalance or has exceeded it? When does 'optimal imbalance' become just plain inefficiency?⁶⁰

Adoption of either one of the two major economic strategies for growth depends on the type of regime that will implement it, since "each alternative has different policy implications and different consequences for economic growth."⁶¹ For example, the "big push" balanced growth strategy "can only be adopted by a regime that has a considerable amount of resources and control over both public and private enterprise. This regime must have central planning and a means of persuasion, inducement, or coercion to secure compliance."⁶² This authoritarian regime, says Ilchman and Uphoff, must also have the support of the intellectual, bureaucratic, and military elites, as well as the support of the business sector. On the other hand, a regime that is about to select imbalanced growth strategy would be "sympathetic to the interests and activities of private entrepreneurs, or presumably to those of foreign investors. For this reason, it cannot be taken seriously by socialistically-inclined regimes or by regimes

⁶⁰ Ibid., p. 51.

⁶¹ Idem.

⁶² Warren F. Ilchman and Norman Thomas Uphoff, The Political Economy of Change (Berkeley, Cal.: University of California Press, 1969), p. 12.

in countries where private business has low status."⁶³

4.d.1. Balanced Growth in a Capital-Surplus Economy

Viewing the balanced-growth theory in terms of Libya's capital-surplus economy, Higgins notes that:

Nurkse's advice for cases which fit his assumptions . . . is cold comfort for countries like Libya and the other Middle East oil countries, where the domestic market is too small for the most efficient capital-intensive techniques to be profitably used over a large number of industrial activities. . . . Libya has both a strong export and a virtually unlimited supply of capital, but cannot really "develop" for lack of human resources.⁶⁴

The balanced growth theory stresses the need for the expansion of economic and social infrastructure, such as health, education, transport, and housing. This emphasis on economic and social infrastructure is, perhaps, even more important and vital to the problems of developing countries.

Fortunately, Libya is not faced with the problem of capital shortage, as is the case with many developing countries, and, therefore, building a social overhead capital is feasible:

Planning under a capital-surplus economy can potentially implement the balanced-growth theory. Libya, Kuwait, and Saudi Arabia because of their extraordinary affluence can

⁶³Ibid., p. 13.

⁶⁴Benjamin Higgins, Economic Development: Principles, Problems, and Policies (New York: W.W. Norton, 1968), pp. 818 and 838.

capitalize every sector of the economy. Public capitalization simply takes the place of private capitalization that is not forthcoming for the obvious reason that the basic conditions to attract private capital are absent.⁶⁵

Farley, also, sees the personnel problem as a real constrictor to the immediate implementation of the balanced-growth thesis: "The great limitation to the big-push-balanced-growth theory, as revealed by Libyan circumstances, lay in the quantitative and qualitative shortage of the type of labor required to cooperate with the readily available surplus capital."⁶⁶

Libya, by virtue of its wealth and in the national interest, must direct more attention to the investment in the many settlements throughout the country in order to reduce the disparities between them and the traditional urban regions. In addition, as part of its social responsibility, Libya should improve its standard of living and make life better in its widely dispersed, and long depressed, oases and settlements. This will have both stabilizing and positive economic and social effects in the country:

. . . if rural migration were to be stemmed, the oases had to be developed. If national unity were to be cemented, the oases had to be developed. If modernizing influence were

⁶⁵Farley, op. cit., p. 252.

⁶⁶Ibid., p. 255.

to be spread beyond the coast, new investment had to be pumped into the oases. In any case, . . . the country had the financial capacity to deploy surplus capital oasis by oasis and region by region."⁶⁷

4.d.2. Unbalanced Growth in a Capital-Surplus Economy

Turning now to the doctrine of Hirschman's unbalanced growth, we see that certain premises apply to the Libyan case, while others are unapplicable. For example, the Libyan situation supports Hirschman's position that "the ability to invest" in developing countries is weak in contrast to the actual availability of savings, and, "development is held back primarily by the difficulties of channeling existing or potentially existing savings into available productive investment opportunities."⁶⁸ In the developing countries' economy, according to Hirschman, total savings exceed total investment capacity, whether or not the distribution of income is uneven. This excess may appear in hoarded gold or foreign exchange, or "may be indicated by luxury consumption of the rich, by occasional large-scale spending and gifts even among the poor, and by considerable amounts of time devoted to leisure and similar phenomena ubiquitous in underdeveloped countries."⁶⁹

⁶⁷ Ibid., p. 253.

⁶⁸ Hirschman, op. cit., p. 36.

⁶⁹ Ibid., p. 37.

Heitman, who also thinks that it is more fashionable to view the developing economy in terms of its availability to absorb capital, looks at the Libyan situation from the context of the dichotomy between the traditional and the modern economies. He attributes the failure of the former to attract capital and absorb it effectively to the absence of economic interdependence. The opportunities of the latter for profitable investment are limited (apart from oil) to four industrial sectors: construction, transport, trade, and services. "The shortcoming of the Libyan economy . . . has been its failure to widen the scope of the modern sector."⁷⁰ Heitmann thinks that the absence of an entrepreneurial tradition "has been a major factor in retarding the development of a broader-based modern economy. Unfortunately, the required talents and imagination are not always readily acquired. Gradually, however, with a widening of educational opportunities, such a tradition can be expected to develop."⁷¹

Although Hirschman suggests the stimulation of entrepreneurship, he seems to underestimate the role of personality and institutional factors. A regime following the Hirsch-

⁷⁰G. Heitmann, "Libya: An Analysis of the Oil Economy," The Journal of Modern African Studies VII, No. 2 (1969): 253.

⁷¹Ibid., p. 254.

man strategy, should invest in social overhead capital in order to encourage entrepreneurs, but

the extent to which Hirschman is correct about the effect of strategic unbalancing government investments on the incentives of private individuals to invest can be demonstrated within some reasonable time period. . . . When connections between investments and outputs are reliably established, behavioral or cultural variables affecting both of these might usefully be explored and tested.⁷²

Higgins recognized the importance of these behavioral and cultural variables in his study on Libya in the early 1950's. He imputed what he calls "the problem of incentive" to Libyan history. During this time, "economic development took the form of investment by foreign colonial powers," without the direct participation of the indigenous Libyans whose interests were ignored by their foreign rulers:⁷³

With such a history, it is not surprising that most Libyans have failed to take the long view. To work or save today for benefits to be obtained five, ten, or twenty years hence has even seemed a little foolish in the light of their experience. Certainly that experience has done little to undermine the fatalism of the typical Libyan.⁷⁴

⁷²Ilchman and Uphoff, op. cit., pp. 265-66.

⁷³Higgins, op. cit., (1959 edition), p. 34.

⁷⁴Ibid., pp. 34-45. The term "fatalism" mentioned in Higgin's quotation, is what Rogers and Shoemaker (1971) defined as "the degree to which an individual perceives a lack of ability to control his future." Higgins had observed a

On the other hand, the abundance of capital in Libya's present economy (a fact that tempted economists to describe it as the capital-surplus economy and the exceptional economy in the developing world)⁷⁵ contrasts with Hirschman's supply-criticism of balanced growth, where capital in Libya is not only adequate, but surplus.

Higgins has expressed his skepticism of the applicability of unbalanced growth strategy for Libya. He is doubtful that expansion in one sector will generate growth in others. Higgins reached the conclusion that, "so far as the Hirschman model is concerned, the Libyan case means that 'unbalanced' growth, once started, can remain unbalanced for a frighteningly long time."⁷⁶

Unfortunately, the balanced and unbalanced growth strategies were defined by economic factors. Their proponents paid little attention to such non-economic factors as political, sociological, and administrative factors. Ilchman and Bhargava recognized this deficiency in these strategies. They analyzed them in terms of the following questions which, they believe, are necessary in judging these strategies before

widespread tendency to live for today and entrust the future to Providence. Ibid., p. 35.

⁷⁵ See, for example, Higgins (1968), El-Mallakh (1969), and Farley (1971).

⁷⁶ Higgins, op. cit., (1968 edition), p. 838.

they can be considered operational:

What is the character and membership of the elite? What is the degree of organization of two of the affected sectors--the urban working force and the peasantry? How responsive is the political system to group demands? What is the expected role of government in the strategy? How many civil servants will be required, and to what extent and in what way must they be trained?⁷⁷

A regime adopting any of these strategies must, therefore, pay attention to the interests of the urban working class as well as the interests of the people living in the rural areas. This is particularly true, since "growing income disparities, regressive taxation, and suppression of the right of labor organization would probably not be accepted for long without unrest and . . . regional imbalances not remedied by the optimal investment pattern of balanced . . . growth strategy would be a source of discontent."⁷⁸

⁷⁷ Ilchman and Bhargava, op. cit., p. 27.

⁷⁸ Ibid., p. 14.

CHAPTER V

POPULATION PLANNING AND REGIONAL GROWTH

1. Introduction

Economic planning in Libya, which was made possible by the increasing oil revenues, has led to considerable expenditures in the different sectors of the economy. But, unfortunately, recent development plans do not include explicit goals with respect to urbanization and population distribution. Regional population policies should be part of any plan aimed at raising the level of the economic and social development of different parts of the country. In particular, the government should, through these plans, consciously institute measures to counteract the already existing polarization processes that usually favor the two major cities of Tripoli and Benghazi.

The substantial injection of oil revenues into the major urban centers resulted in an unprecedented increase in incomes and in higher standards of living. This was accompanied by a significant increase in the level of imported goods,¹ a sudden

¹According to J.A. Allan et al., op. cit., the total value of imported food and food products increased from 5 million Libyan pounds in 1956 to 27.6 million in 1968, while agricultural exports declined from a value of 1.23 million in 1956 to only about 32,000 in 1968.

flourishing of the various service activities, and a boom in the construction industry. The effect of these developments was a rapid drift of population from rural areas and small towns into the major urban centers. With this drift from the land, Libyan agriculture was left to decline and the consumer turned to foreign markets for the satisfaction of his daily food needs. The following table shows the changing place of agriculture in the national economy from 1958 to 1967:

TABLE 13

The Changing Place of Agriculture
in the National Economy: 1958-1967

	(in millions of Libyan pounds)		
	1958	1962	1967
Total value of agricultural production	20.0	17.3	21.0
Value of food exports	2.7	1.8	0.6
Value of food imports	5.1	8.4	19.2
Food deficit (value)	2.4	6.6	18.6
Value of petroleum exports	0	49.0	417.3

Source: J.A. Allan et al., Libya: Agriculture and Economic Development (London: Frank Cass & Sons, 1973).

The decline of the small towns may constitute a hindrance to effective economic development, and could be associated with the decline in agricultural productivity. These towns are markets that help to promote agricultural commercialization. They serve as centers for the efficient exchange of goods and services. In addition to that, the small towns serve as nodes for introducing innovations and modernization and as community centers for the people living around them. Therefore, in order to achieve an effective economic development and to maintain agricultural productivity, these towns should be developed, their integrity should be preserved, and they should be as accessible as possible to the people in their hinterlands.

The observed gap between urban and rural areas could be reduced and eventually eliminated by a rational distribution of towns among the various regions of the country. A system of cities, acting as nodes of innovation and urban-related functions within different rural areas, is necessary for the efficient diffusion of modernization. An integrated urban hierarchy is essential to facilitating the movement of innovation and modernization from the major urban centers, along the transportation routes, to the smaller urban centers, and finally into the rural areas. Furthermore, by increasing the number and range of services at all levels of the hierarchy, we can stabilize the population and check the migration

of people from small towns and rural areas to the major urban centers, thereby avoiding urban congestion and other related problems.

The aim of this final chapter is to examine the pattern of population distribution in northeastern Libya in terms of the changes that occurred in it over the period 1954-1973, for which data are available. This will be followed by an attempt to propose a future pattern of population and services in this region.

2. Population Distribution in North-eastern Libya: 1954-1973

An outstanding feature of northeastern Libya's population distribution is its marked coastal concentration (Maps 5, 6). Increasing temperature extremes and the scarcity of water to the south make the coast and the Jebel El Akhadar the most favored physical environment for productivity and living conditions. Three physiographic zones of population concentration can be identified in northeastern Libya. The coastal area, particularly the Benghazi Plain, contained over 50 percent of the total population in 1973. The Jebel El-Akhdar supported about 36 percent, while the area east of it, known as the Marmorica Plateau, accounted for about 10 percent.

Map 7 shows the population change over the 1954-1964 period. Over two-thirds of the places that were recorded in the 1954 Population Census experienced population increase. For

MAP 5

DISTRIBUTION OF POPULATION

1964

(Thousan 's)

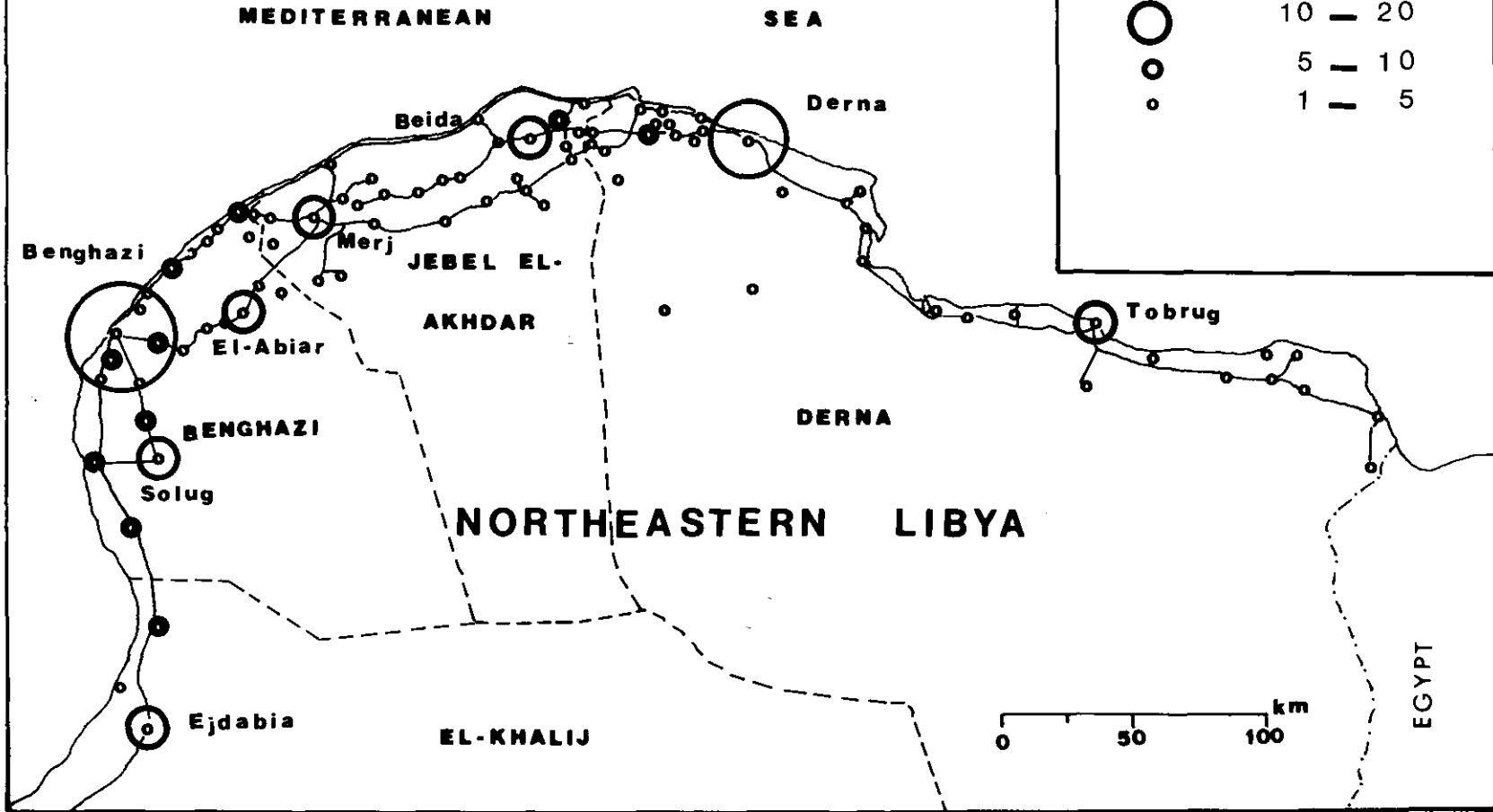
OVER 100

20 — 50

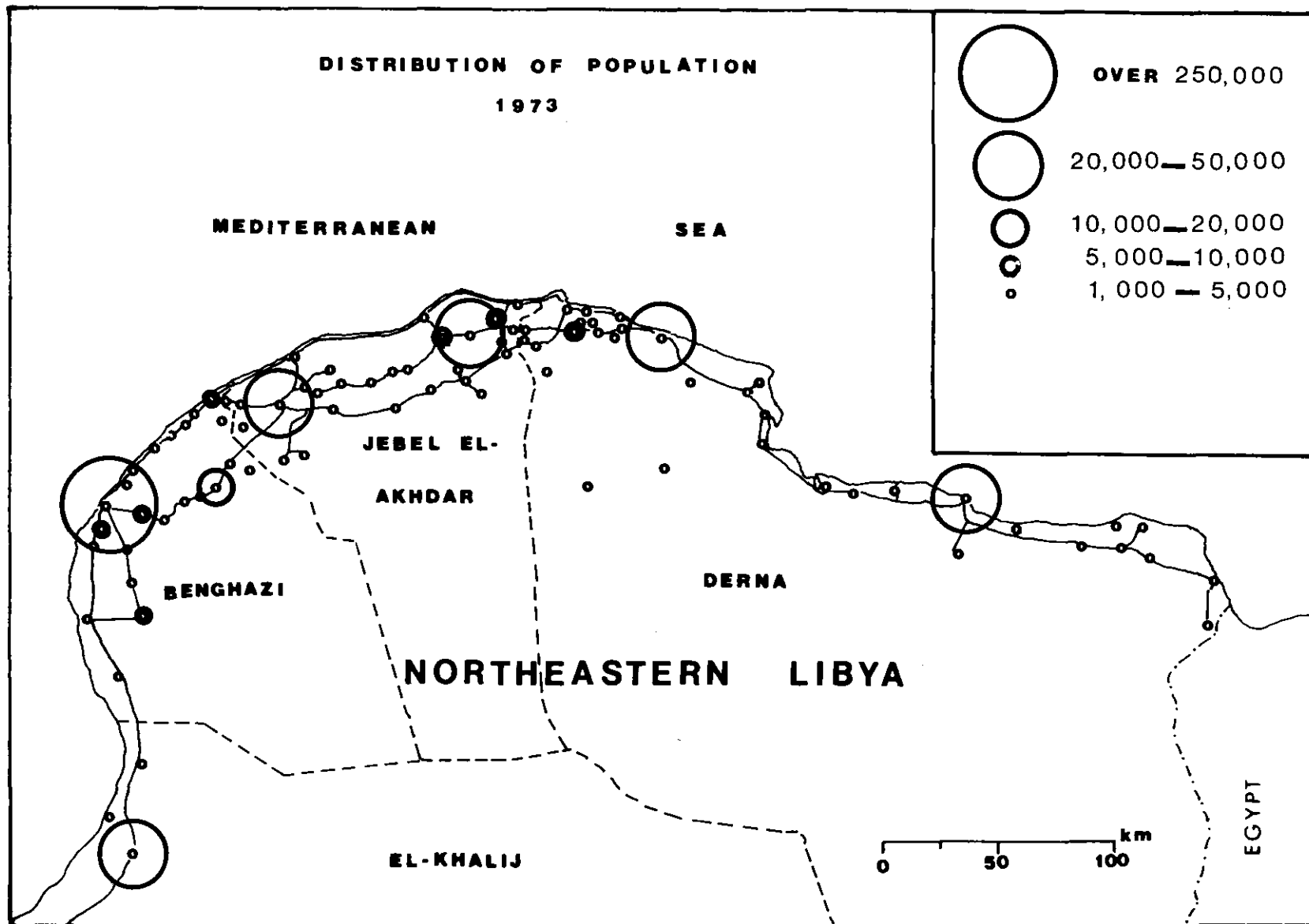
10 — 20

5 — 10

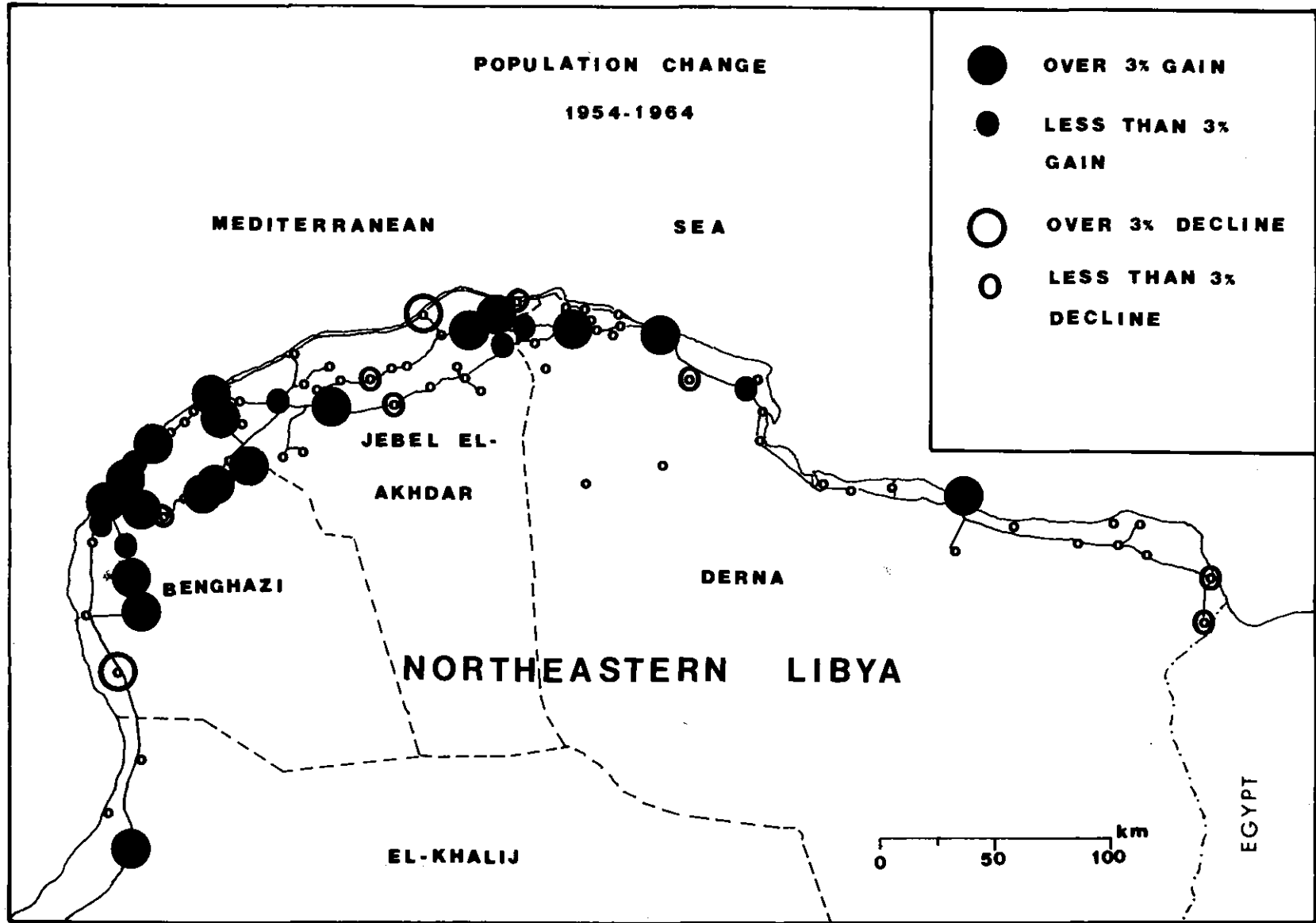
1 — 5



MAP 6



MAP 7

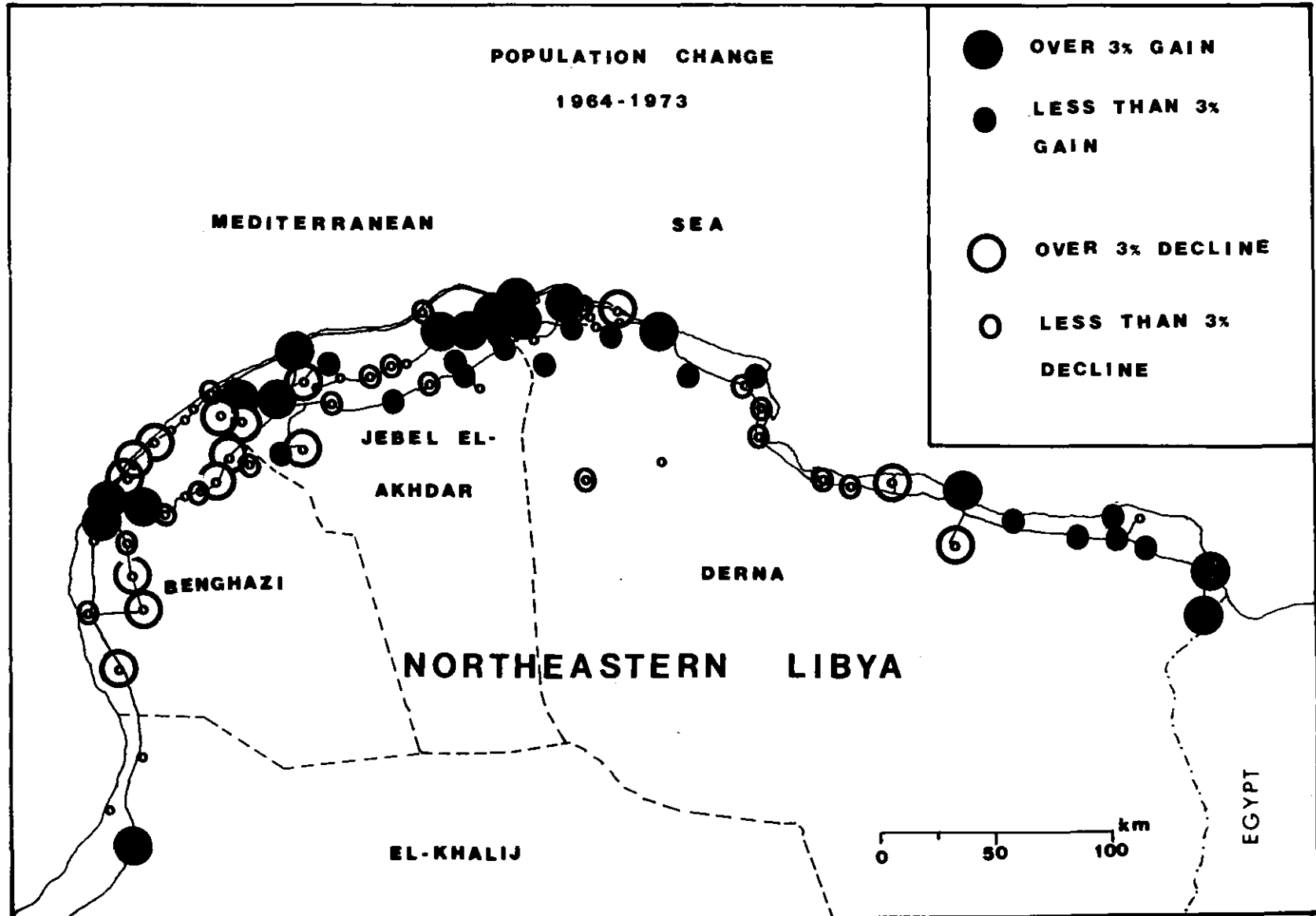


most of them the increase was fast. Rapid population growth was experienced in both the urban and rural areas of the region. Places of rapid population growth included those in the rainfall zones and the richest farming areas. In 1964, the agricultural sector represented the largest single employer, accounting for nearly 40 percent of the total labor force.

The population change from 1964 to 1973 was different from that of the earlier decade, as it was marked by unevenness. While all the large towns experienced rapid population increases and passed from one state of rapid growth to another, the populations of the small towns and rural areas declined, most of them passing from a state of fast growth to fast decline in less than 10 years (Maps, 8,9). Table 14 shows the transition between growth and decline for various urban and rural centers over the 1954-1973 period. Places that had rapidly gained population, both in 1964 and 1973, were the major urban centers of Benghazi, Beida, Derna, and Tobrug. These cities, with their booming construction industries and commerce, have been the main focus of commercial activity. They became the receiving centers for the indirect benefits from oil revenues in the past fifteen years.

Benghazi, for example, has grown from less than 70,000 people in 1954 to over a quarter of a million people in 1973, an increase of about 280 percent. The city's spectacular

MAP 8



MAP 9

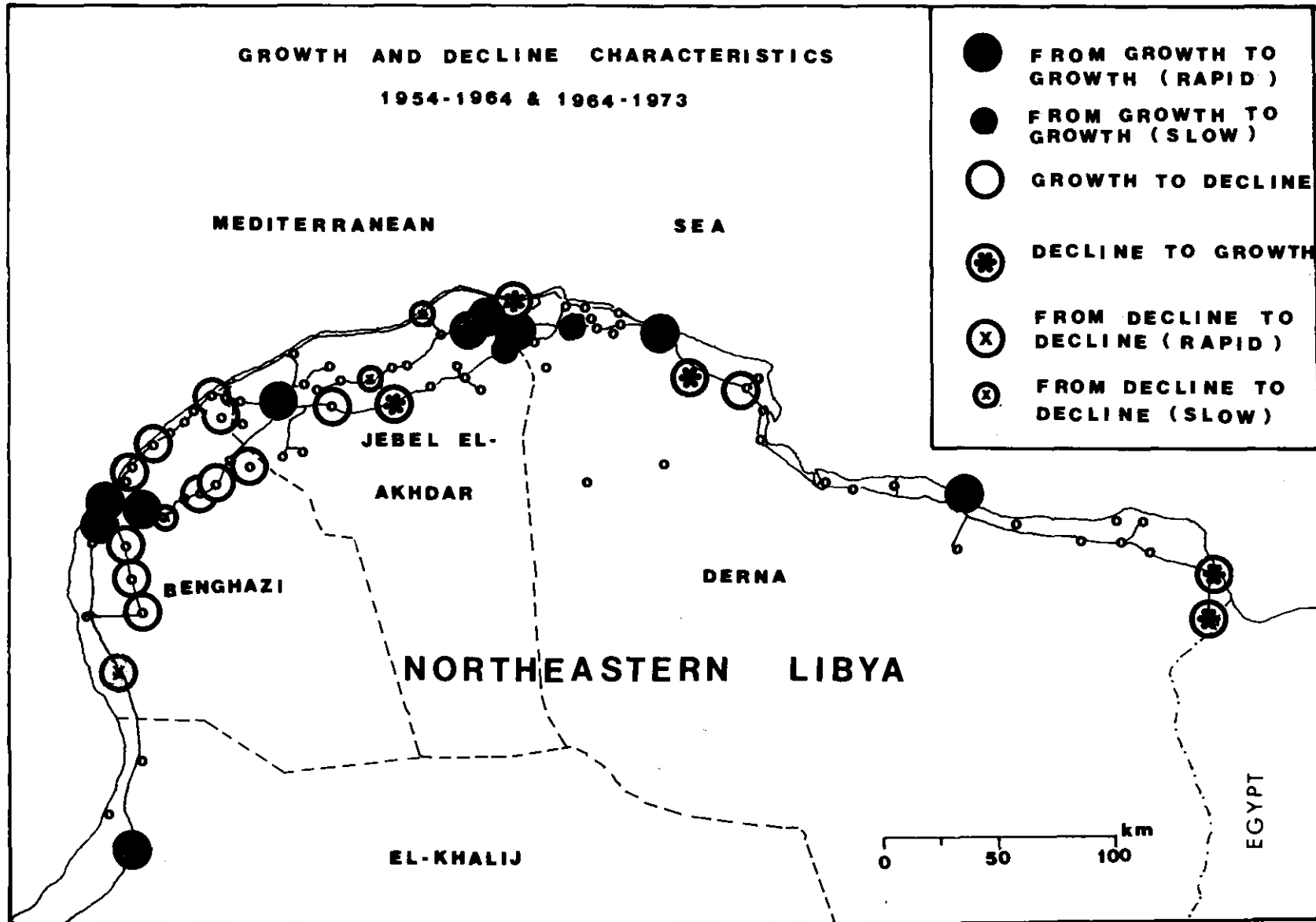


TABLE 14

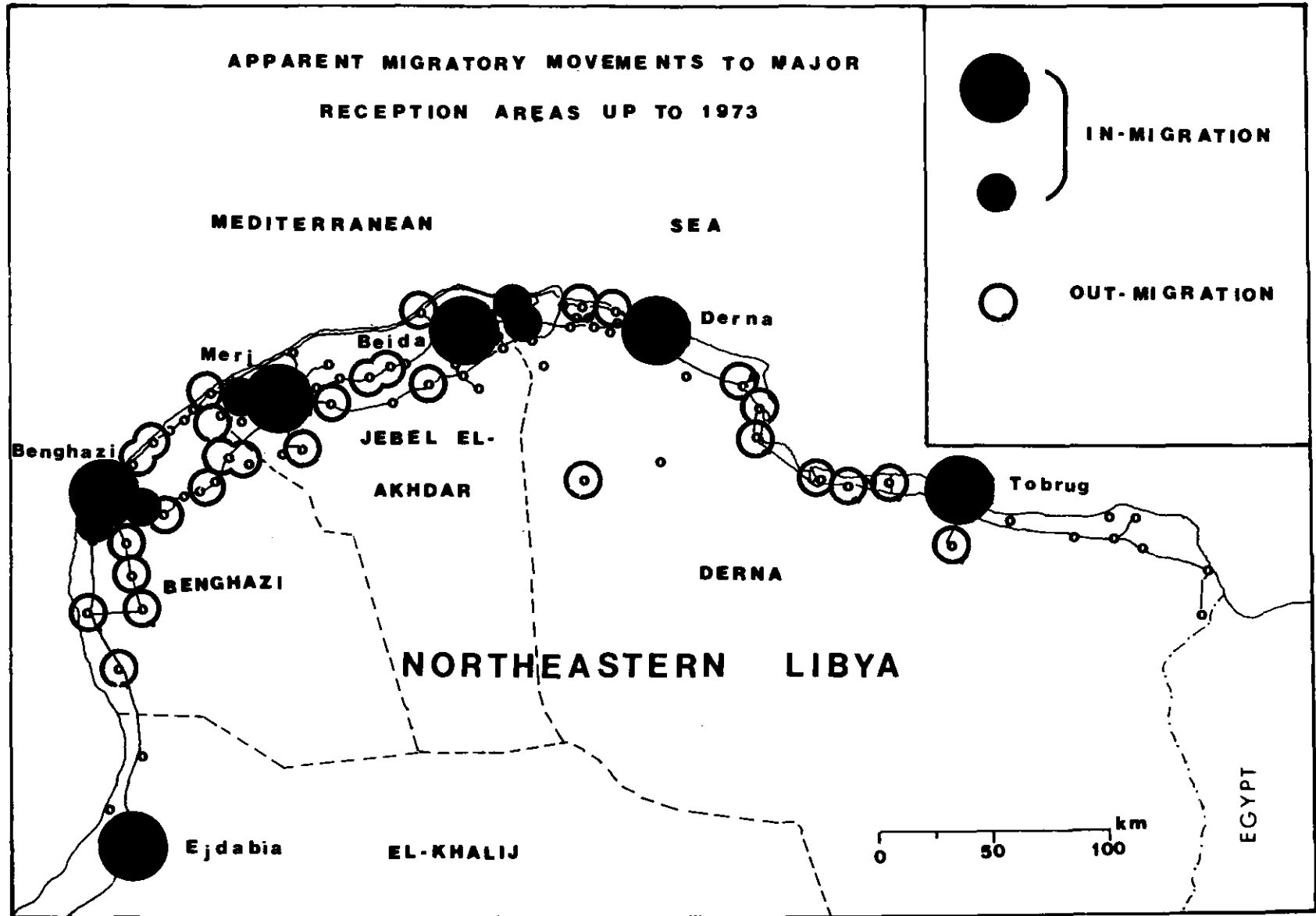
Growth Characteristics of Centers

1964-1973	GROWTH		DECLINE	
1954-1964				
GROWTH	Fast	Slow		
	Ejdabia Benghazi Beninah Beida Shahat Derna Tobrug Al Gwarsha El Merj Labreg	El Gubba Girnada Al Gaydiya	Solug Jardina El Abiar El Kuefya Deryana Al Hmeda Sidi Khalifa Bu Maryam Sidi Mahyus Tokrah Taknis El Nawaghia Um El Rezam	
DECLINE			Fast	Slow
	Susah Msaid El Bardiya Marawa Martuba		El Magrun	Al Haniya El Rejma Al Bayada

growth was a reflection of the high rate of the population increase in Libya, in general, plus the heavy migration from other parts of the country. Thus, the cluster of economic activity, availability of jobs, and the generous spending of oil money in the major urban centers, has led to a strong "backwash effect" in the form of heavy out-migration from smaller towns and rural areas into the major urban centers (Map 10). The economies of the villages and rural areas, which depended in the past on agriculture, have been threatened by the loss of labor. This was reflected in the decline of the agricultural labor from about 40 percent of the total labor force in 1964 to 32.5 percent in 1968 (Table 12).

Since rural-urban migration is usually the result of disparities in income, specific measures should be taken on the part of the government to produce a regional distribution of income that would lead to a more desirable population distribution. This might involve some kind of subsidization of rural populations in order to keep them in place during the second stage of development, when agriculture and manufacturing will take the place of petroleum as the prime mover of the economy. This subsidization could be in the form of a higher standard of living accommodations, improved recreation facilities, or other urban amenities now lacking in the rural centers. The creation of a new center with a pleasant environment, or the upgrading of an old one might provide a

MAP 10



powerful stimulus to the general development of an area. As improvements are needed in the quality of the human environment, one might anticipate an increase in productivity. More important, it would contribute to the checking of rural migration to the overcrowded urban centers.

In the following section, an attempt is made to propose a future pattern of centers in order to ensure a more balanced distribution of population and services in northeastern Libya. It is only a preliminary attempt and, of course, further research is needed to determine whether the new and upgraded centers would operate efficiently, given the proposed amount of support.

3. The Hierarchy of Places

The spatial model of central places, based on the central-place theory, asserts that a system of centers results from an economy that is largely devoted to trading and other tertiary activities, and that centers exist mainly to provide goods and services for surrounding areas. This system develops because goods and services tend to fall into grades each having its own range, which can be expressed in terms of an "upper limit," or a "lower limit," called the threshold. The upper limit results from spatial competition between centers of supply, or from the maximum distance that consumers are willing to travel in order to obtain the goods and services

offered at a location. The threshold is defined as the minimum population (or minimum amount of purchasing power) needed to support a given type of central function in order for it to exist at a center.

For the distribution of different categories, or orders of goods and services, the theory postulates the existence of a hierarchy of central places. Each higher level center in the hierarchy provides all goods supplied from successively lower level centers plus a group of higher order functions that set it above the lower level centers in the system. Higher order centers have greater centrality and are more widely spaced than those of lower order.

3.a. Selection of Data

A complete list of central functions, offered by each of the 85 settlements in the study area, was made possible during a survey of the Eastern Muhafadat in 1966.² They include the different kinds of services in each of the following main urban functional areas--administration, communications, social services, commerce, and other services. Some of these services include several examples of more than one level of establishment, e.g., general hospitals, specialist

²The 1966 Field Survey was undertaken by Doxiadis Associates - Consultants on Development and Ekistics, Athens, Greece.

hospitals, and dispensaries; universities, secondary schools, and elementary schools. In all, information was recorded for twenty-four kinds of services, including thirty-seven different establishments (Table 15).

Three levels of central functions (low, medium, high) are considered in the present study, attaching one, two, and three points to them, respectively (Table 16). Central functions are weighted according to the following method: If the division of services into three was possible, as in the case of political administration and health services, they were rated on all three levels. If the services did not lend themselves to further division, as in the case of banks and clubs, the threshold size (measured as the minimum population needed to support a given function) has been the factor considered in classifying the functions. It should be noted that where a place had establishments on more than one level within the same service, only the highest level establishment was counted. Usually, as in this last case, the higher level establishment includes the services provided by the lower level ones.

By adding up the values of the full variety of services in each center, weighted according to their respective levels, it is possible to measure the quality of its services. If a place scored the maximum in all the thirty-seven services, it obtained 60 points. Figure 1 shows the frequency distri-

Table 15

SETTLEMENTS	FUNCTIONS	POPULATION (1966)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37				
			UNIVERSITY/COLLEGE	MUHAFADAH	PUBLIC LIBRARY	VOCATIONAL SCHOOL	BUS SERVICE	BANK	POLICE HEADQUARTERS	WHOLESALE TRADE	CINEMA	SPECIAL HOSPITAL	GENERAL HOSPITAL	HOTEL	TELEPHONE EXCHANGE	CULTURAL CLUB	SECONDARY SCHOOL	BALADIYAH	SPORTING CLUB	ZAWIYAH	BAKERY	GRAIN STORAGE	POST OFFICE	SERVICE STATION	SLAUGHTERHOUSE	COURT	CLOTHING STORE	VETERINARY	PIPED WATER	ANIMAL MARKET	MEAT STORE	KORANIC SCHOOL	ELECTRICITY	POLICE STATION	SUB-BALADIYAH	MOSQUE	DISPENSARY	GENERAL STORE	ELEMENTARY SCHOOL	SCORE			
1	BENGHAZI	160,000	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	60		
2	BEIDA	16,000	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	57		
3	DERNAH	22,700		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	59		
4	TOBRUG	18,700			x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	54		
5	EL MERJ	14,000				x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	48		
6	EJDABIAH	18,000		x				x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	45		
7	SHAHAT	7,073							x		x	x	x	x		x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	23		
8	MESSAH	5,200							x							x						x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	13		
9	AL GWARSHAH	6,000								x																															34		
10	EL ABIAR	14,260									x					x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	29		
11	SUSAH	2,730										x	x	x	x						x	x																			17		
12	MSAID	2,100										x																														28	
13	EL CUBBAH	5,535											x									x	x																			25	
14	BENINAH	6,000														x																										19	
15	BATTAH	2,700															x																									20	
16	SOLUG	12,500																x																								24	
17	GAMINIS	5,575																																								19	
18	AL FAYDIYAH	2,490																																								19	
19	TOKRAH	4,730																																								10	
20	DERYANAH	5,000																																								7	
21	UM HFAYN	600																																									

Table 15 (Cont.)

FUNCTIONS SETTLEMENTS		POPULATION (1966)	FUNCTIONS																																		SCORE												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		35	36	37									
22	EL MKHELLI	600																																								7							
23	ZAWYAT ELARGYB	1,500																																										7					
24	AL GEIGAB	1,750																																										13					
25	SIDI MAHYUS	945																																										9					
26	EL BARDIYAH	800																																										8					
27	JARDES ELABID	5,300																																											16				
28	EL MLETANYAH	4,420																																										8					
29	SALUNTAH	2,528																																											11				
30	GIRNADAH	2,000																																											10				
31	MARTUBAH	1,500																																												14			
32	UM ELREZAM	1,575																																												16			
33	AL BAYADHAH	5,000																																												17			
34	TOLMETAH	3,000																																													12		
35	TAKNIS	4,800																																													15		
36	GASR LIBYA	2,150																																													8		
37	BIR ALASHNAB	1,300																																													10		
38	MARAWAH	2,100																																													10		
39	EL REJMAH	4,000																																													8		
40	EL MAGRUN	5,400																																														13	
41	FARZUGHA	2,500																																														8	
42	BU MARYAM	2,000																																															7

Table 15 (Cont.)

SETTLEMENTS	POPULATION (1966)	FUNCTIONS		SCORE
43	EL DEBUSIAH			9
44	IABRAG			12
45	BIR AL GANDULA			11
46	AL HANYAH			10
47	KAMBOOT			9
48	AYN MARAH			9
49	JARDINAH			8
50	OMAR ELMUKHTAR			10
51	EL KUEFYAH			8
52	SAFSAF			6
53	EL AZZYAT			7
54	EL GARTHABAH			7
55	AL MORSAS			3
56	ZAWYAT ZANZUR			3
57	EL ADEM			6
58	AYN EL GHAZALAH			9
59	SIDI KHALIFAH			6
60	RAS EL HILAL			5
61	EL NAWAGHIAH			5
62	AL HMEDAH			6
63	TIKA			5
64	SATATAH			4
1	UNIVERSITY/COLLEGE			
2	MUHAFADAH			
3	PUBLIC LIBRARY			
4	VOCATIONAL SCHOOL			
5	BUS SERVICE			
6	BANK			
7	POLICE HEADQUARTERS			
8	WHOLESALE TRADE			
9	CINEMA			
10	SPECIAL HOSPITAL			
11	GENERAL HOSPITAL			
12	HOTEL			
13	TELEPHONE EXCHANGE			
14	CULTURAL CLUB			
15	SECONDARY SCHOOL			
16	BALADIYAH			
17	SPORTING CLUB			
18	ZAWIYAH			
19	BAKERY			
20	GRAIN STORAGE			
21	POST OFFICE			
22	SERVICE STATION			
23	SLAUGHTERHOUSE			
24	COURT			
25	CLOTHING STORE			
26	VETERINARY			
27	PIPED WATER			
28	ANIMAL MARKET			
29	MEAT STORE			
30	KORANIC SCHOOL			
31	ELECTRICITY			
32	POLICE STATION			
33	SUB-BALADIYAH			
34	MOSQUE			
35	DISPENSARY			
36	GENERAL STORE			
37	ELEMENTARY SCHOOL			

Table 15 (Cont.)

SETTLEMENTS	POPULATION (1966)	FUNCTIONS	
65 MARSJA LUK	1,660	UNIVERSITY/COLLEGE	1
66 JARDES JARRAR	1,000	MUHAFADAH	2
67 GASR ELJEDI	2,500	PUBLIC LIBRARY	3
68 SIDI BUZEID	2,250	VOCATIONAL SCHOOL	4
69 EL AFRUN	520	BUS SERVICE	5
70 EL BNAYAH	900	BANK	6
71 BERSIS	700	POLICE HEADQUARTERS	7
72 EL AWITIAH	2,400	WHOLESALE TRADE	8
73 EL MABNI	1,300	CINEMA	9
74 GABR JIRAH	550	SPECIAL HOSPITAL	10
75 MARKEZ ELGHABAT	500	GENERAL HOSPITAL	11
76 BEIT THAMER		HOTEL	12
77 KARJAH	2,300	TELEPHONE EXCHANGE	13
78 AL BUMBDAH	325	CULTURAL CLUB	14
79 KHAWLAN	250	SECONDARY SCHOOL	15
80 AYN LALI	200	BALADIYAH	16
81 EL GARA	900	SPORTING CLUB	17
82 SIDI ELGHARIB	1,000	ZAWIYAH	18
83 UM ELGDEYH	500	BAKERY	19
84 SIDI KHALID	500	GRAIN STORAGE	20
85 TANSULUKH	600	POST OFFICE	21
		SERVICE STATION	22
		SLAUTERHOUSE	23
		COURT	24
		CLOTHING STORE	25
		VETERINARY	26
		PIPED WATER	27
		ANIMAL MARKET	28
		MEAT STORE	29
		KORANIC SCHOOL	30
		ELECTRICITY	31
		POLICE STATION	32
		SUB-BALADIYAH	33
		MOSQUE	34
		DISPENSARY	35
		GENERAL STORE	36
		ELEMENTARY SCHOOL	37
		SCORE	

TABLE 16

The Weighting of Services by Level

Service	Threshold Size	Points
<u>Administration</u>		
(1) Political		
Muhafadah	16,000	3
Baladiyah	5,535	2
Sub-Baladiyah	350	1
(2) Police and Courts		
Police Headquarters	14,000	3
Court	1,575	2
Police Station	350	1
<u>Social Services</u>		
(3) Health Services		
General Hospital	14,000	3
Specialist Hospital	5,200	2
Dispensary	350	1
(4) Education		
University or College	16,000	3
Secondary School	2,700	2
Elementary School	200	1
(5) Public Library	18,700	3
(6) Vocational School	16,000	3
(7) Cinema	14,000	3
(8) Cultural Club	2,730	2
(9) Sporting Club	2,490	2
(10) Hotel	2,100	2
(11) Religious Services		
Zawia	600	1
Koranic School	350	1
Mosque	200	1

Communications

(12) Bus Service	14,000	3
(13) Posts & Telecommunication		
Telephone Exchange	2,730	2
Post Office	2,000	2
(14) Service Station	2,100	2

Commerce

(15) Banks	14,000	3
(16) Wholesale Trade	14,000	3
(17) Retail Trade		
Cloth Stores	2,150	2
Meat Stores	1,500	2
General Stores	200	1
(18) Animal Market	1,300	2

Other Services

(19) Veterinary	1,300	2
(20) Slaughterhouse	1,500	2
(21) Grain Storage	945	1
(22) Bakery	800	1
(23) Electricity	200	1
(24) Piped Water	200	1

bution of the 85 centers according to the quality of their services, as measured by scores ranging from 1 to 60.

Table 17 shows the distribution of all the centers among the following grades:

Grade	I	-	Over	60 points	
"	II	-	From	50 to 59	"
"	III	-	"	40 to 49	"
"	IV	-	"	30 to 39	"
"	V	-	"	20 to 29	"
"	VI	-	"	10 to 19	"
"	VII	-	"	1 to 9	"

FIG. 1

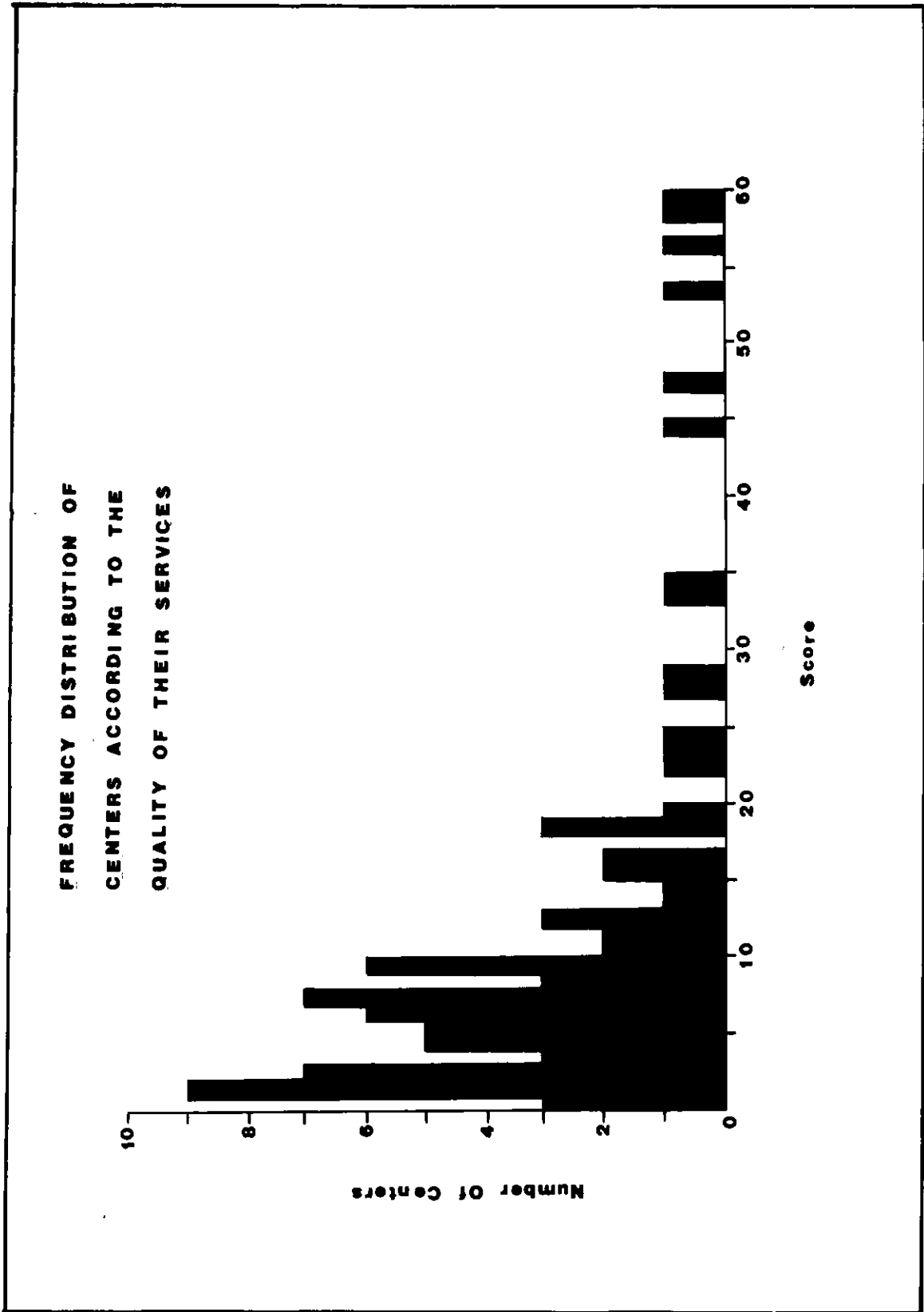


TABLE 17

THE DISTRIBUTION OF CENTERS AMONG GRADES

Grade	Score	MUHAFADAT		
		Benghazi	Jebel El Akhadar	Derna
I		Benghazi		
II	59			Derna
	57		Beida	
	54			Tobrug
III	47		El Merj	
	45	Ejdabia		
IV	35		Shahat	
	34	El Abiar		
V	29		Susah	
	28		El Gubba	
	25	Beninah		
	24	Gaminis		
	23		Messa	
	20	Solug		
VI	19	Tokrah	Battah	
			Faydiya	
	17		El Bayada	Msaid
	16		Jardes El Abid	Um El Rezam
	15		Takinis	
	14			Martuba
	13	El Gwarsha		Geigab
		El Magrun		
	12		Tolmeita	Labreg
	11		Bir El Gandula	
			Salunta	
	10	Deryana	Marawa	Bir El Ashhab
			Girnada	
			El Haniya	
			Omar El Mukhtar	

TABLE 17 (cont.)

VII	9	Sidi Mahyus		Kamboot Ayn Mara El Bardiya
	8	El Mletania El Rejme Jardina El Kuefya	Gasr Libya Farzuga	
	7	Bu Maryam	Zawyat El Argub	El Garthaba El Azzyat Um Hfayn El Mkhelli
	6	Sidi Khalifa El Hmeda	El Debbusia Safsaf	Ayn ElGhazala El Adem
	5	Tika El Nawaghia		El Atrun Gasr El Jedi Ras El Hilal
	4	Bersis	Sidi Buzeid Satatah	
	3	Gabr Jira	Al Awilia El Bnayah Jardes Jarrar	Marsa Luk Zawyat Zanzur Morsas
	2	El Mabni	Markez El Ghabat Sidi El Gharib	El Bumbah Karsa Beit Thamir Khawlan Ayn Lali El Gara
	1	Tansulukh		Sidi Khalid Um El Gdeyh

3.b. The Existing Pattern of Major Centers

The present spatial structure in northeastern Libya is largely built around the three Muhafadah capitals, which are also the three outstanding service centers that fall into grades I and II. They are:

Benghazi - The only grade I center of the region, its main port, and the seat of one of the only two universities in the whole country. It will undoubtedly continue to play its role as the commercial, educational, and administrative capital of the region. The location of the international port and airport and the already accumulated commercial, recreational, educational, and other higher-order functions, guarantee this expectation.

Derna - Was until a few years ago, and still is in many respects, the only other real urban center in northeastern Libya after Benghazi. It has a long history of urban life and a strong tradition as an administrative and educational center.

Beida - Was established during the monarchy regime as the national capital. However, it lost its national administrative functions after the 1969 revolution. Its future role will be that of an educational center as it is the seat of a new university college. In addition, it will perform the functions of the Muhafadah capital. On the present criteria,

both Derna and Beida are classified as grade II centers.

In addition to the three Muhafadah capitals that constitute the main foci around which the present spatial structure in northeastern Libya is built, there are the three Baladiya capitals of Tobrug, Merj, and Ejdabia. Tobrug is classed as a grade II center, while Merj and Ejdabia are classed as grade III centers. Their areas of influence consist of a number of rural villages that are dependent on the Baladiya capital for such higher-order functions as secondary education, health services, and administration.

Within each area of influence of the grade II and III centers, we can distinguish the existence of certain villages of the grade IV and V types that perform higher-order functions for a number of other villages (mainly small centers of the grade VI and VII types). Such higher-order functions are largely commercial. Nevertheless, sometimes they are also administrative, as in the case of the Sub-Baladiyas seats, or even educational (villages with secondary boarding schools). At present, however, the dependence of the various small centers on such grade IV and V centers is not very great. For the majority of functions, each grade VI and VII center depends directly on the respective Baladiya center.

3.c. The Proposed Pattern of Major Centers

As an aid for considering the future pattern, Map 11 shows circles around each existing and proposed grade II and III centers. The radius of 40 km. (25 miles) is based on the present spacing of major centers in northeastern Libya. Whether a new center is proposed depends on the following considerations:

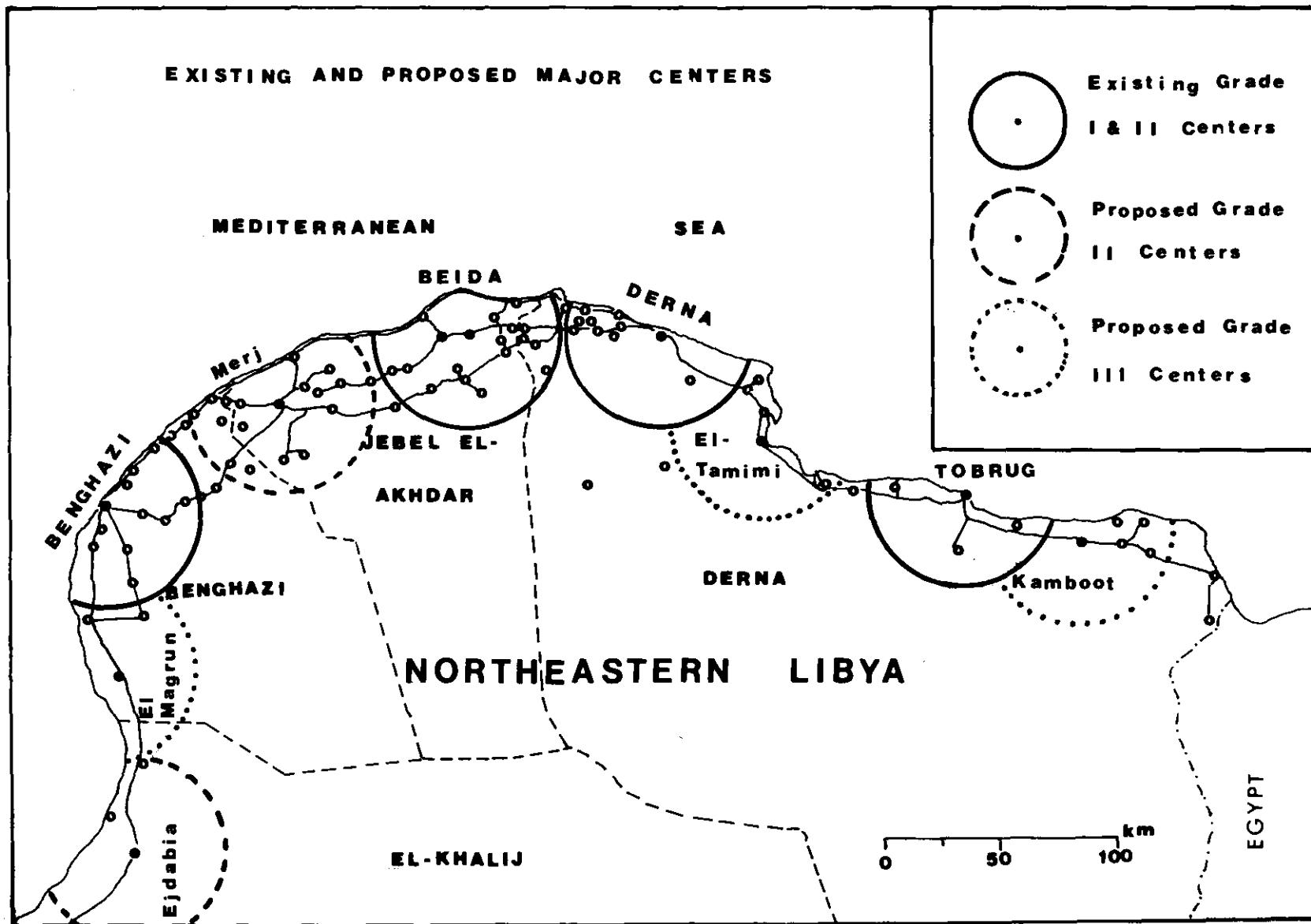
- 1) a minimum population required to support the functions of a higher grade center; and
- 2) the specific geographic and economic features of the area.

The following list shows the estimated service area populations of each existing major center, except Benghazi. These estimates are based on the 1973 preliminary results of the General Population Census:

Beida	80,000
Derna	70,000
Tobrug	60,000
El Merj	60,000
Ejdabia	52,000

In proposing a future pattern we have to keep in mind the minimum population required to support a grade III center. The lowest estimate of a population served by any of the existing centers is 52,000--the minimum estimate for Ejdabia.

MAP 11



All parts of northeastern Libya could be considered in the following order:

- (1) The Benghazi Plain and the Gebel El Akhdar,
- (2) The oil region around Ejdabiah,
- (3) The areas east of the Gebel El Akhdar (between Derna and the Egyptian border).

In the most populous part of the Benghazi Plain and the Gebel El Akhdar there are two obvious gaps in the distribution of major centers. The first is between Benghazi and Beida. The only grade III center that exists between the two is El Merj, which lies in the most important agricultural region in northeastern Libya. El Merj already has enough services to qualify as a grade II center. The surrounding fertile plain of El Merj will give it the basis to become a flourishing major center. It could serve an area with a population of some 75,000. This is the average population of Beida and Derna, the existing two grade II centers.

The second gap in the distribution of major centers is between Benghazi and Ejdabia. There exist, between the two, only two grade V centers and one grade VI center. The best place for a new grade III center along the Benghazi-Ejdabiah road would be El Magrun, the existing grade VI center. Its location on the main road and its distance from Benghazi would justify the assumption that it would become a grade II center with a population of some 50,000 people, the minimum estimate

of the grade III centers.

In the oil region, the only grade III center that serves the petroleum hinterland is Ejdabiah. It was the first urban center to feel the impact of petroleum exploration and production in a direct way. It serves the role of a Baladiyah capital, but its recent growth and the key to its role is associated with petroleum developments. Its location on the intersection of the coastal road, with the routes leading to the oases of the South, makes it an important transport nodal point. The development of the two oil terminals of Marsa el Bregah and Zwitinah near Ejdabiah will have an impact upon it in the form of demand for various services. Because of its location, Ejdabiah has all the basic prerequisites for developing into a grade II center, supporting a service area of some 80,000 people (about one and a half times the population of its present service area).

Marsa el Bregah is a possible site for creating a grade III center in the oil region. It represents the largest concentration of industrial investment in northeastern Libya. Existing potentialities at El Bregah promise that it will develop into a grade III center. Therefore, its population growth should be encouraged in order to reach the minimum population required to support its proposed grade III functions.

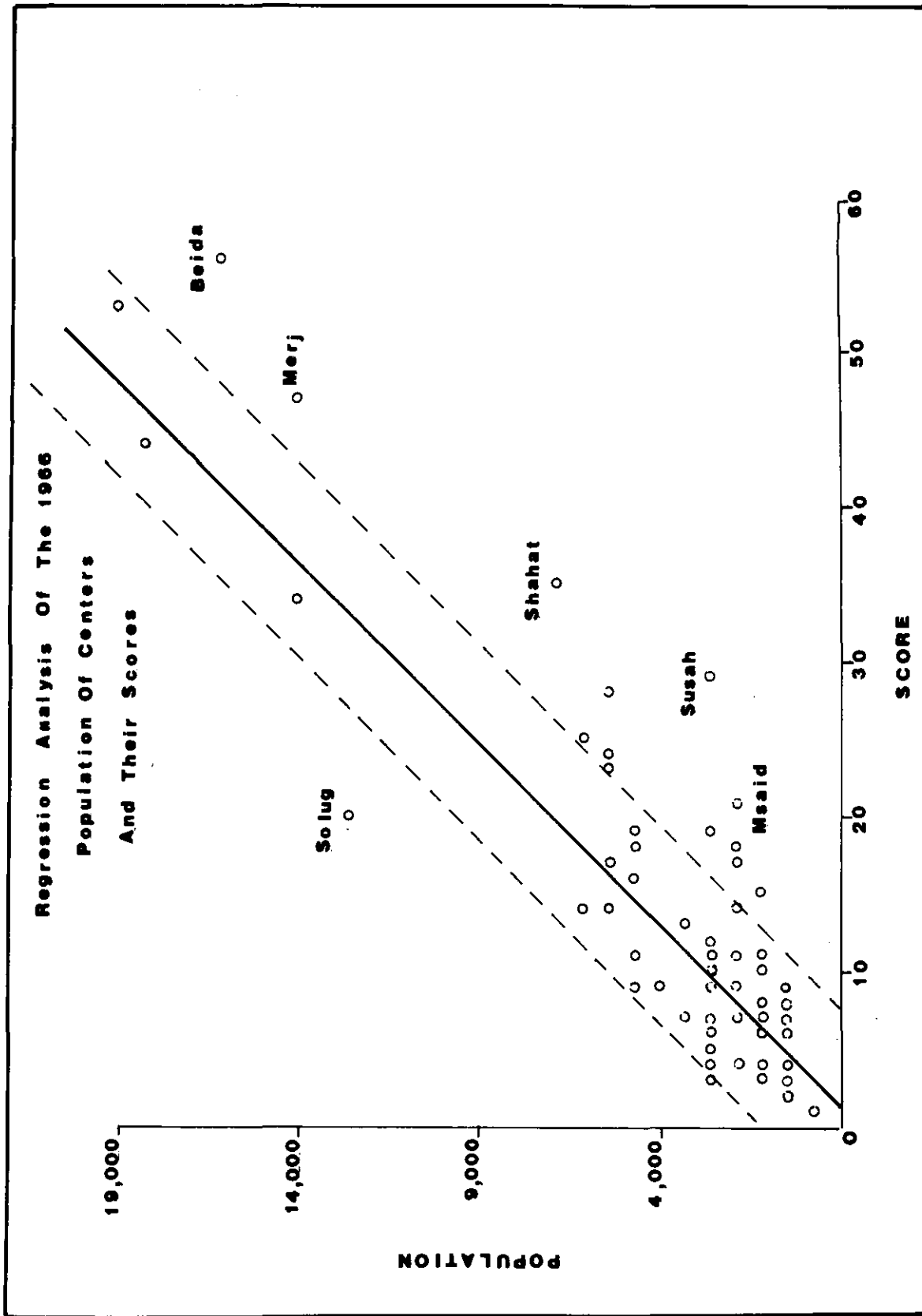
In the areas east of the Jebel El Akhdar the only grade

II center between Derna and the Egyptian border is Tobrug. Tobrug is the second town in northeastern Libya to feel the impact of the petroleum activities in a direct manner. The construction of the 500 km. long oil pipeline from the Serir oil field to the oil terminal of Marsa Hariga near Tobrug has already provided a strong stimulus for the growth of its economy in recent years. The potentialities of its commercial port, an excellent deep-water harbor and its proximity to the major port of Benghazi, will help to increase its development and enable the town to support more people than the population of its present service area.

There will still be two gaps in the distribution of the grade III pattern in this part of northeastern Libya, east of Derna. One is between Derna and Tobrug, and the other is between the latter and the Egyptian border. Two grade III centers will be needed in this part, and Kamboot and El Tamimi may grow to perform this function. These two centers are well situated to serve the areas east and west of Tobrug, as well as to support the minimum population required for their proposed new grades.

Figure 2 shows the results of the regression analysis of the 1966 population of the centers along with their respective scores. Deviations from the regression line indicate that some centers had more functions than would be expected from their populations. Others had more people than their

FIG.2



scores indicate. Examples of the former group of places include the tourist centers of Shahat and Susa, and the border town of Msaïd. These centers cater to non-resident populations.

The towns of El Merj and Beida also lie below the regression line. El Merj experienced a severe earthquake in 1963 that destroyed a great part of the town and forced the majority of the people to leave and relocate in Benghazi and Derna. Beida's high score of functions was due to the rise of its political status, established during the monarchy regime, as the national capital.

Solug is the only center which showed a high deviation above the regression line. It had more people than expected from its low score of functions.

3.d. Intermediate Centers

The following are the characteristics of the growth and decline of some of the intermediate centers that fall within grades IV and V:

El Abiar

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change (%)</u>
1954	8,612	
1964	14,260	6.5
1973	10,315	-3.1

The settlement of El Abiar has always been the center of the surrounding agricultural region. In addition to the administrative and commercial functions that it serves for the surrounding villages, it is also an important educational center. It has the largest boarding school in northeastern Libya, the service area extending far beyond the town's normal area of influence.

Since El Abiar's role is connected with the surrounding agricultural region, which will be a part of the primary forces of economic growth in the future, its population decline should be stopped (it lost about 4,000 people between 1964 and 1973). The people who have already migrated from the town and settled mainly in Benghazi should be encouraged to return to their town. In this respect, the addition of more functions of higher order would be a good incentive.

Solug

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change (%)</u>
1954	9,240	3.4
1964	12,395	-5.3
1973	6,501	

The very high decrease of its population (nearly half of its population during the 1964-1973 period) must be associated with the attraction of the urban centers and the oil activities. It is, after all, in close proximity to both

Benghazi and the oil region. However, its economy depends on animal husbandry and agriculture. According to 1960 Agricultural Census, Solug was the richest cereal-producing area in northeastern Libya.

Gaminis

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change (%)</u>
1954	5,901	---
1964	5,865	-2.9
1973	4,313	

There was a very slight population decrease between the 1954-1964 period. However, the rate of decrease has grown during the 1964-1973 period, reaching the level of almost 3.0% annually. This decrease is apparently due to emigration to Benghazi, where employment opportunities are available. The settlement lies in the biggest cereal-producing area (after Solug) in Muhafadah Benghazi.

Beninah

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change (%)</u>
1954	3,238	12.2
1964	7,197	3.7
1973	9,578	

In addition to its role as the center of an agricultural area, Beninah is also an important air transportation center,

serving Benghazi and the eastern part of Libya. Its transportation activity will continue to expand, especially as domestic air services increase, and it will influence developments within the settlement.

Shahat

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change (%)</u>
1954	4,149	5.1
1964	6,266	3.5
1973	8,240	

The role of Shahat is currently restricted below its potentialities. The natural beauty of the area, the excellent climate, and the many archeological treasures of Shahat could undoubtedly make it a major tourist attraction, activating a large scale center of services in this area. However, the present main function of the settlement is limited to that of a local commercial and administrative center.

Shahat, as well as other settlements in the area that possess similar touristic potentialities, should have more and varied central functions. Shahat's future role as the major pole of touristic attraction in Libya will acquire increasing importance when the Libyan economy reorients itself to this new resource.

Susah

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change(%)</u>
1954	2,845	-2.7
1964	2,062	6.0
1973	3,183	

The demographic evolution of Susah seems to indicate that its population declined during the period 1954-1964, while between 1964 and 1973 it experienced an increase of 6.0 percent per year. The construction of the new capital of Beida, a pole of attraction, could justify a slight movement of the population of Susah towards this larger urban center with its better jobs. Susah should have more and varied central functions to serve its future role as a tourist center. It has the impressive remnants of its ancient history, in addition to the sea and its many beaches.

Gubbah

<u>Year</u>	<u>Population</u>	<u>Average Annual Rate of Change(%)</u>
1954	3,808	5.0
1964	5,735	2.0
1973	6,743	

Gubbah experienced a higher population increase during the earlier decade of 1954-1964 than during the 1964-1973 period. The explanation for these developments may lie in

the fact that, during the later period, the effects of the current oil boom have been widely felt. This has come in the form of more employment opportunities and higher wages in the urban centers. In addition, the urban centers have attracted the rural populations, as opposed to the 1954-1964 period when agriculture was still providing the greatest part of the country's economic base. Thus, during recent years, the natural growth of the population has been reduced by the migration towards the urban centers, which offer employment opportunities in sectors other than farming or livestock.

3.e. Summary Notes

In view of the fact that the oil prosperity is expected to last only a few decades, based as it is on the exploitation of a non-renewable resource, the economy should be planned for a smooth transition from this oil phase to the next phase, when agriculture and manufacturing will provide the primary forces of the economy. The particular population distribution, resulting from current economic conditions, may not be suitable for this eventual economic pattern. The development of agriculture, manufacturing, and tourism may call for the existence of a relatively large manpower component in the small urban and rural settlements of the country.

If the migration of the rural population to Benghazi and

other urban centers continues unchecked, based on short-term expectations, then the transition from the present pattern of a petroleum-dominated economy to that of a more diversified one will not be smooth. One can anticipate a critical period of maladjustment.

In view of the above, it is necessary that proper policies, based on long term expectations, be devised. These policies must be designed for a balanced distribution of population through the region of northeastern Libya.

CHAPTER VI

SUMMARY AND CONCLUDING REMARKS

One of the primary interests of the geographer, regarding the problem of economic development, arises from the fact that sectoral imbalance invariably has a spatial manifestation. Therefore, the problem of correcting the sectoral imbalance has an important counterpart in regional development and planning. The reversal of regional imbalance becomes a complex problem because the polarizing process is historically conditioned and is deeply ingrained into the structural economy. Accordingly, it has been our argument that a study of regional development must begin with a historical analysis.

In the Libyan case our research pointed to the fact that the dominance of the towns along the Mediterranean water front began as far back as the period of Greek and Roman activity. The confinement of effective life space to the narrow coastal margin continued under the Arabs, the Turks, and the Italians.

In the interior there emerged another economy based on nomadism with very different attitudes, beliefs, and life styles. However, this economy was too sparse to flourish independently and it always remained in the shadow

of metropolitan coastal dominance. An understanding of the historical evolution of these regional economic relations is essential for the contemporary purposes of formulating development plans for modern Libya.

The oil boom of the Sixties and the revenues accruing to Libya showed a pattern of flow which essentially confirmed the historical grain of the space economy. Specifically, the oil industry in Libya exhibited characteristics similar to the mining economies in that it was developed in an enclave model. Given the weakness of the nomadic base of the traditional economy, the net effect was a mass exodus from the interior to the coast. Given the fact that oil is an extractive economy of a nonrenewable resource, I feel that it is most important that the mining of oil should be accompanied by dispersed industrial and agricultural activities.

An awareness on the part of the Government concerning these issues has resulted in a substantial investment in infrastructure for the interior regions. But, unfortunately, such fiscal and investment policies has not been accompanied by the formulation or the implementation of a rational, regional policy of population. For example, schools were built in virtually empty and emptying areas.

These questions led us to analyze the population data

in Libya in order to identify the growing and declining regions. This analysis was supplemented by the spatial analysis of hierarchical service-centers in order that we could identify the gaps in space and in the hierarchical order. The results of this investigation were used to suggest a settlement policy for northeastern Libya.

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