

**TOWARDS A DEVELOPMENT STRATEGY: THE ROLE OF SMALL TOWNS
IN URBANIZATION AND RURAL DEVELOPMENT PLANNING IN
JIZAN PROVINCE, SAUDI ARABIA**

**A thesis submitted to the University of Salford in partial
fulfilment of the requirement for the degree of
Doctor of Philosophy**

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May 1991

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ACKNOWLEDGEMENTS

I would like to express my profound thanks, appreciation and gratitude to all the people who have been involved in the preparation of this research.

First of all, I am deeply indebted to my supervisor, Professor M B Gleave, the Chairman of the Department of Geography at the University of Salford, for his guidance, advice, suggestions, help and patience, for reading and correcting the thesis which indeed significantly contributed to the completion of this work.

My gratitude is also extended to Muhammed Ibn Saud University for providing me with a scholarship to finish this study. In particular, I wish to extend by special thanks to Dr M S Al-Salem, the General Secretary of the University, for the encouragement and help he has provided me with during the study.

I am also very grateful to all of the Government departments for providing me with a useful information for analysis. In addition, my deep thanks go to my brothers and friends for their help and assistance during the fieldwork.

I owe a most great appreciation to all members of my family for their encouragement and moral support, particularly my wife and children who accompanied me during the study in the UK.

Finally, I wish to thank Miss Angela Cross for typing the thesis and Mr Gustav Dobrzynski for drawing most of the figures for the thesis.

THIS STUDY IS DEDICATED TO MY
PARENTS WHO FIRST SENT ME TO
SCHOOL AND DEVOTED THEIR LIVES TO
MY CARE AND EDUCATION. THEIR
SUPPORT IS STILL ENDLESS.

ABSTRACT**Towards a Development Strategy: The Role of Small Towns in Urbanization and Rural Development Planning in Jizan Province, Saudi Arabia**

One of the most striking features of the spatial pattern of development in most developing countries is the wide difference between what occurs in urban areas and rural areas, particularly in those countries which have made a rapid transition from a traditional agriculturally based economy to a modern oil-based economy. The differences can be seen in the high concentration of development services in the larger urban centres, and the overshadowing of the larger rural areas. Obviously, the residents of urban centres not only enjoy high incomes, but they also have greater opportunities to use services and facilities than does the overwhelming majority of the rural population who live in scattered villages and hamlets.

Jizan province as a rural area provides a classical example as is reflected by the wide gap in the spatial pattern of development in Saudi Arabia, not only between the province and the rest of the country, but also between the urban centres and rural areas within the province. In fact, this area is characterized by rich natural resources, particularly for agricultural development, as well as by a high population density. However, it is still one of the backward areas in the country, and it is characterized by traditional subsistence methods of agriculture, low incomes, low standards of living, and a high rate of rural emigration to urban areas for better jobs and social services.

Recently, the development plans have initiated a system of urban development centres in the hope that the wide gap between regions and urban and rural areas will be reduced. Unfortunately, this strategy has clearly proven inadequate in providing a comprehensive regional development policy to solve the rural problems and stimulate the rural economy in the province.

It is important to note that agriculture is the basic and predominant activity of the rural population in this area. Therefore, the development of this sector is not only desirable but also feasible for the purpose of making rural areas economically and socially more attractive by increasing farmers' incomes, and creating work opportunities as well as improving other sectors that depend on agricultural products. However, agricultural development by itself is not a sufficient basis for rural development that will encourage farmers to stay in their villages. This sector should be provided with support services that enhance the quality of life such as education, health care, water, and electricity supplies.

In order to achieve the rural development objectives, the regional development policy in the province should be broken down, by an extension of the urban settlement hierarchy, to include the role of small towns. Since the larger urban centres have not generated the development process in rural areas, the small towns may play a positive

and effective role in the provision of economic and social services in remote areas as rural service centres. This indeed is the main aim of the study.

The structure of the study is divided into three parts. The first part demonstrates the theoretical framework of the development strategies, and their failure in relation to rural development. It also discusses the role of small towns as an alternative policy for rural development. Moreover, the spatial pattern of development in Saudi Arabia was also examined.

The second part provides a comprehensive geographical analysis of Jizan province. Physical environment, socio-economic conditions, and rural settlement patterns are discussed in order to provide a general perspective of information about the study area. The rural problems that relate to agricultural development and the provision of public and community services are also examined. Indeed, these analyses show that the rural problems range from inadequate provision of services where they exist, to a complete absence of services and facilities in larger rural areas. This part also examines urbanization and the urban and rural relationship in order to see how the role of small towns could provide an appropriate extension of the urban hierarchy within the existing urban system.

The third part of the study deals with the policy of small towns as a planning tool for solving rural problems. Factor analysis has been used for classification of small towns. This method shows that the rural market centres have a great potential for accelerating the development process as central places. Programmes and implementation policies to establish the new role of small towns are discussed at the end of this part.

PART ONE
CHAPTERS 1 - 3

Chapter One

Introduction

1.1 Nature of the Problem

The major problem of the spatial pattern of development in many developing countries is the wide disparities between urban and rural areas. This disparity can be recognized into two evident problems. First, there is a high marked and even glaring contrast in economic growth between the traditional agricultural sector in rural areas, and the modern non-agricultural sector in urban centres. Second, there is a high level of urban polarization with a major concentration of investments and services in a few larger urban centres.

Until recently, the development planning strategies have not benefitted the rural areas. They have concerned themselves with urban problems, while the rural areas, where the majority of the population of these countries live and work, have received inadequate attention in social and physical planning proposals. The result of this policy is that there is a high rate of rural to urban migration at the expense of rural areas in general and of the agricultural sector in particular.

In Saudi Arabia, as in some other developing countries, the discovery of oil has marked a major turning-point in the country's economic development. The country has experienced rapid transformation and structural socio-economic changes that have included large spatial occupation shifts and major sectoral relocation of resources. Therefore, the gap between the new sector and its related activities, and the traditional agricultural sector has rapidly increased and

inequalities in income, resources, and access to services have become more visible. Thus, the spatial structure of national growth has been characterized by two major imbalances, viz:-

- A - At the regional level, it can be seen that there is a high degree of spatial dualism dividing the country's regions into two broad categories: 1 - the more developed, or core centres, that belong to the middle belt running through the eastern, central, and western regions; and 2 - the underdeveloped or peripheral areas belonging to the southern and northern regions.

- B - At the urban versus rural level, the rapid growth of urbanization with a high level of concentration of services and facilities on the one hand and the stagnation of traditional agriculture and lack of farming jobs in rural areas on the other, have created wide divergences in income and social welfare provision between cities and rural areas.

Al-Ibrahim (1982, p7) noted that:

modern economic activities and population tend to be situated in the large urban centres of the western, central and eastern regions which are characterised by faster growth and higher level socio-economic development, while the southern and northern regions of the country remain predominantly rural and practically untouched by important projects.

Jizan province, the study area, is one of the southern rural regions (see fig.1.1) and it is distinctive as the largest and most remote area from the dynamic and developed centres. This means that

the province is entirely on the periphery of the urbanized core middle belt regions. This remoteness has placed a major restraint on the province's experience of the level of development that has affected most areas of the country. Thus, as will be shown, the province has suffered most in the country from the problem of disparity, as it has a very high per centage of rural population (approximately 70 per cent), low levels of urbanization, high percentage of illiteracy, low per capita income, and inadequate distribution of social and infrastructural services.

Consequently, the rural population has tended to flock to the urban centres, particularly outside the province, where the benefits of development are presumed to exist and be available. Unfortunately, most of the rural migrants are the young and most productive people, leaving behind the old, infirm, women and children. In fact, the first factor behind rural migration is that the traditional agricultural economy in the province, in which the majority of the rural people are engaged, exhibits the common features of low income, limited employment opportunities, and insecure basic necessities of life in contrast with modern urban sectors.

The second factor contributing to the process of rural migration is the wide difference in the standard of living between rural and urban areas. In the rural areas, it will be demonstrated that living conditions are very poor and basic services and infrastructure such as water, electricity, health care, and education are inadequately distributed or unavailable. Most of the rural population who live in remote villages have to travel long distances over difficult roads

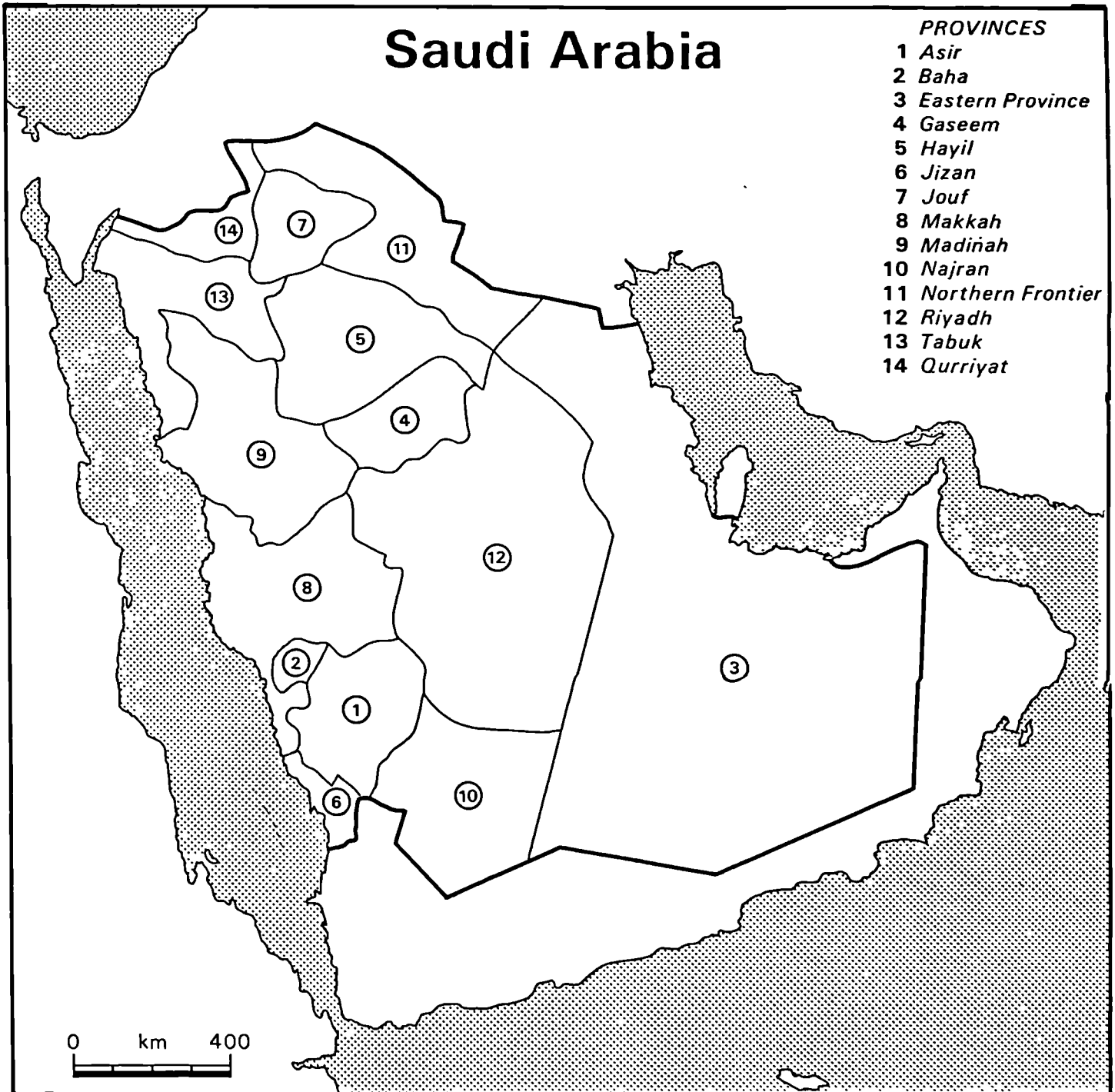


Fig.1.1 Saudi Arabian Provinces

which of necessity entails spending money and energy in order to reach these services. By contrast, in urban areas, the population not only enjoys better distribution of these services and facilities, but they are also more accessible to them. They have opportunities of work, high incomes, and higher standards of living in terms of housing, welfare, education, healthcare and many other facilities.

1.2 Aims and Objectives of the Study

This study focuses on Jizan province which is considered to be a rural and a backward area in Saudi Arabia. The main interest of the study is to modify the existing urban trend of development which is concentrated in a few urban centres, and to include the settlements that would play a significant role in promoting widespread services, facilities, infrastructure, and economic activities in rural areas in order to reduce the wide disparities that occur between urban and rural areas.

Therefore, there are two primary aims underlying this study. The first is diagnostic, i.e. the study seeks to provide better understanding of the problems related to rural settlements through the interpretation of recent evidence and analysis of data collected in the field. The second aim is prescriptive with implications for policy based on the diagnosis and relation to new development goals and objectives. The study seeks to establish a close tie between the rural development and the settlement policy. McLaughlin (1976, p156) argues that, to date, the attempted solutions to rural problems have evolved around a general policy of settlement rationalization where the primary

objective has been to secure changes in the pattern of settlement which will increase the range of social, commercial, and public services and improve the educational and employment opportunities for the rural population.

In this context, a policy of settlement rationalization based on the role of small towns has been suggested for rural development in Jizan province with the hope of achieving a successful solution for rural problems.

In fact, within the boundaries imposed by the above aims, special emphasis has been placed on the following objectives:

1. To identify the problems facing rural areas in Jizan province such as those related to basic rural economy, and the provision of social, infrastructure, and housing services.
2. To analyze the small towns policy as an instrumental approach for rural development.
3. To examine national development policy and its weaknesses in the context of regional and rural development.
4. To carry out an analytical description of Jizan province in terms of physical environment, population, socio-economic situations, and rural settlement characteristics.
5. To analyze and examine the existing urban centres and their failure to achieve rural development in Jizan province.

6. On the basis of this analysis, to suggest an extension of the urban hierarchy by an increasing of the number and improvement of the spatial distribution of small towns to act as rural services centres.
7. To identify the services and policy that would encourage small towns to perform their new role for rural development.

1.3 Settlement Policy and Rural Developments in Jizan Province: A Brief Background

The relative underdevelopment and backwardness of the province noted in the previous section is not related to scarcity of natural resources or growth opportunities, but rather to the focus of planning and development on larger urban areas, resulting in the neglect of rural areas. Unfortunately, until the present time, most of the social and physical planning proposals were still concerned with a few major urban centres of more than 5,000 inhabitants, while for the rural areas, where the majority of the population work and live, there is no specific rural settlement policy to alleviate rural problems.

Clearly, the concentration of most of the development activities in larger urban centres has not only succeeded in isolating rural areas from the urban centres, but it has also failed to tackle the rural problems and to organize the spatial structure of settlement hierarchy. Therefore, the existing urban strategy (see chapter nine) is inadequate to provide a comprehensive development policy, because it leaves out the small towns in the midst of large rural areas. Clearly, there are several problems that can be recognized as a result of concentration of

development services in a few larger urban centres.

- * There is a high level of urban polarization in specific areas, with high levels of population growth.
- * The few larger urban centres have little significant impact on the main agricultural sector, which was expected to have a high potential in creating employment opportunities and rural development. Unfortunately, this sector is still traditional and undesirable to the rural population. This may be due to the fact that farmers have not been provided with the necessary agricultural services and supporting facilities from other development sectors.
- * The majority of the population and settlements in the province have not been provided with the basic services such as water, electricity supply, municipal, and agricultural services which are the major factors for rural development.

Indeed, the concentration of services in a few urban centres has been criticized by many writers. For instance, Harvey (1972, p230) noted this problem in developing countries when he wrote:

one of the basic problems of planning for economic growth in the developing countries is the concentration of resources in a few larger centres, resulting in the polarization rather than articulation.

Therefore, it is argued that for future rural planning and development there is a need for a fundamental extension of the urban

settlement hierarchy by creating a lower level of rural service centres. These centres should be based on a realistic appreciation of the role of small towns as important places for economic and social development in remote rural areas. These towns obviously already show some significant central place functions such as weekly markets, schools, courts, and health services. These function should be encouraged to continue in order to increase the urbanization level and to establish an integrated spatial system of settlements hierarchy in the province.

Unfortunately, the lower level of the urban hierarchy in the study area seems to be poorly developed and weakly integrated with settlements at higher levels. So its impact on the rural development is still inefficient. Thus, the role of small towns would fill the gap between rural and urban areas (see fig.1.2). The main objective of the development of this level is to increase rural access to development services that are necessary for increasing rural productivity, creating opportunities for jobs, and improving the standard of rural living. Berry (1967, p134) argued that:

availability of a proper hierarchy enables rational planning of facilities to proceed without waste, at the correct scales. Establishment of a new centre or upgrading an old one can provide a powerful stimulus to development of the surrounding area, setting the pace for its progress.

It is important to note that the strategy of rural development in the province should be based on the development of the agricultural sector which in fact depends on rural urbanization. Clearly the agricultural sector needs modern agricultural implements, fertilizers,

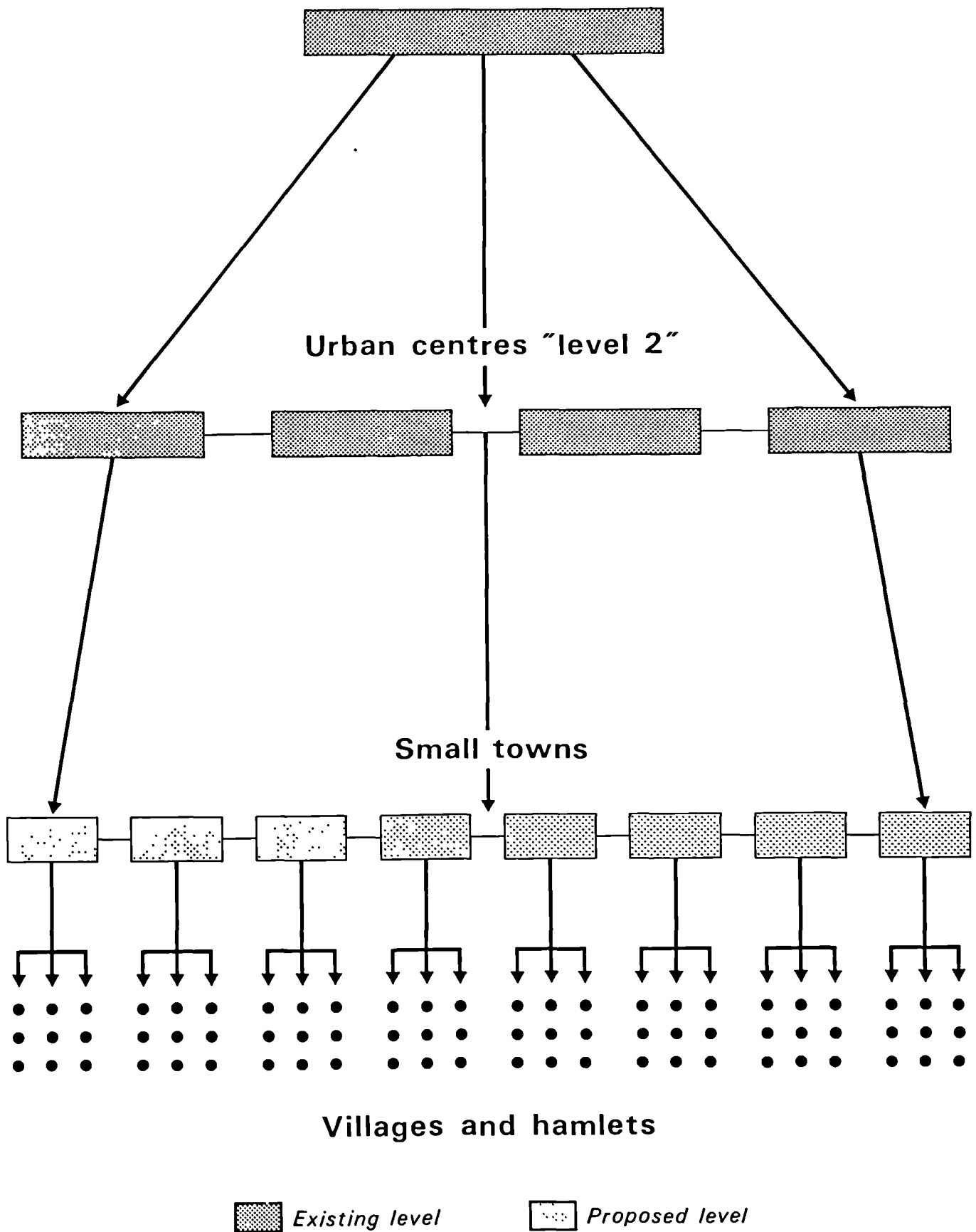


Fig.1.2 Proposed Model of Small Towns for Rural Planning in Jizan Province

pesticides, credit and management facilities, social and physical infrastructure, marketing, and organization systems. These are normally provided from rural service centres at the lowest level of the urban hierarchy.

The role to be played by a lower level of urban centres in terms of rural development has been noted in a World Bank report:

Urbanization is considered a necessary condition for increasing productivity in rural areas by providing markets for agricultural products and most importantly, stimulating specializations of agriculture between regions. Urban activities provide agricultural inputs and incentive goods, and indirectly promote use of modern techniques.

(World Bank (1972) quoted in Al Ibrahim)

Thus, planning and development of the lower level of urban hierarchy using the small towns approach would be based on several assumptions:-

First, the lower level of small towns would lead to high levels of accessibility, particularly in remote rural areas where the demand for services and facilities exceeds the supply.

Second, the lower order of settlement is necessary to break down the urban enclave. This means polarization and backwash effects can be reduced by the development of small towns.

Third, small town levels can be used to aid rural development and small-scale industrial development by provision of social and economic activities that are needed by the majority of the rural population.

Fourth, lower levels of urbanization would play an important part in terms of diffusion of innovation which filters down through the hierarchy of centres from larger levels to lowest levels of central places. More detail concerning the assessment policy of small towns for rural development is presented in chapter ten.

1.4 Definitions

In the previous section, the terms 'development' and 'small towns' have been used in reference to rural planning of Jizan province. The attempt here is to try to define these two key terms from the viewpoint of this study.

Rural Development

The term 'development' is very broad in conception with resulting difficulty of definition and measurement. Social scientists and economists have no satisfactory definition applying to all situations. Generally, however, the concept of development is synonymous with growth and improvement. For example, Johnson (1983, p15) wrote that:

Development means change, it implies betterment. The world carries a sense of optimism and confident expectation of progress of society, and of improvement in the human condition.

Courtenay (1985, p2) suggests that development:

...may be seen as meaning improvement of the standard of living of a population, this standard of living to include social, cultural and political welfare as well as economic

opportunities.

According to the World Bank (1975), rural development is:

...a strategy designed to improve the economic and social life of a specific group of people - the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural area. The group includes small scale farmers, tenants and the landless.

(Quoted in D Lea et al., 1983, p12.)

All the above definitions contain the same element, that is they assert that development should not only entail economic growth but that it should also improve the quality of life. Indeed, these implications of development are the major concerns for development policy in Jizan province. Development, therefore, should include provision of the basic infrastructure and services that are necessary to improve the level of income and alleviate the wide disparities between urban and rural areas. The strategy, therefore, should overcome the problems of the rural economy and retrograde living conditions. So, we agree with Seers (1977) when he points out that the strategy of development should be concerned with problems of inequality, unemployment, and poverty.

Having established that the rural areas need to be considered for development, particular considerations must, however, be introduced in order to fill out the above definition. The first factor to be considered in this context is the provision of a development package which includes the critical mass of services and facilities required for effective changes in the socio-economic structure of the rural areas. This means that rural areas should not only be provided with

the services necessary for increasing agricultural production and income, but also have the benefit of the social services which make rural life more attractive and desirable. The second factor contributing to the process of development is the accessibility of the above services. This means that development services should be located in settlements that can serve a larger population living around them. In fact, easy access to services would lead to a stimulation of the development process and interaction throughout the province. Accessibility, as defined by Mabogunje (1980, p40), includes both physical and social aspects. In the physical sense, accessibility relates to the distance to be covered by an individual in an attempt to secure goods or services, while socially it relates to barriers, status, or recognition requirements which we may also have to overcome in the process.

Small Towns

The strategy proposed in this study focussing on the importance of small towns for rural development brings with it the need to define the term 'small town'. Unfortunately, the 1974 population census did not provide a precise definition of the terms 'urban' and 'rural'. It divided the settlements into emirate capitals, villages, farms, and water resources. Jizan province includes thirty-six sub-emirate capitals, six of which are recognized as larger urban centres in the province (see Chapter Nine).

In the context of small towns, we should accept the term 'emirate capitals' as denoting the largest rural towns, with populations ranging

between 1,000 and 7,000 inhabitants. These towns can be classified in two categories. First, there are the towns with traditional weekly markets which also have minimum populations of 3,000. These towns with rural markets have attracted some administrative functions such as courts, secondary schools, police, and emirate centres.

These towns obviously have a potential role as small urban centres and they may also have potential for taking on other functions which they do not have at present. Therefore, the urbanization policy for rural development should emphasize the role of these towns in order to transform them into important rural urban markets. The principal object of this is to create a demand for urban services which are very limited in rural areas. Professor Gleave (1981) suggested in the context of Sierra Leone, that in areas with a majority of hamlets and small villages, a place with 2,000 inhabitants is substantial and exceptional.

The second category of small towns consists of those towns which do not provide weekly markets but are considered as major central places for their surrounding villages in that they provide some small morning, trading activities and some administrative functions such as emirate centres, health facilities, and intermediate schools. They have minimum populations of 1,000. The development of these towns should be in the direction of their becoming service centres for their scattered hinterland villages. (More details about the classification of small towns will be taken up in chapter eleven.)

1.5 Data Collection and Methodology

The study of rural development and settlement strategies in Jizan province required collection of various data from several sources. This information is concerned with the physical environment, economic and social facilities and activities, population and development policies. However, it is unlikely that one will find all the required information in only one source. Moreover, it is very often found that all the materials collected from various documents are not enough to provide adequate analysis. So, it is necessary to collect specific information by developing sampling techniques. Therefore, the researcher has attempted to draw together different levels of information integral to the study in hand. This information was collected from the following sources:

- 1 - Information collected from government published documents.
- 2 - Unpublished information collected from local government offices in Jizan province, and field observation.
- 3 - Specific information collected by field survey.

Published Sources

The basic data for any study may be collected from various documents. The first aspect of fieldwork was to collect the documents which are relevant to the study. Unfortunately, in developing countries, researchers are generally hampered by scarcity of necessary

data and statistics. Study is even more difficult in these countries when it focuses on a particular area. For example, in Saudi Arabia the only available population figures are those of the 1974 census, which are now out-dated. Moreover, most of the available data are presented at national level, so that regional studies are faced with a deficiency of satisfactory and up-to-date basic data.

In the context of the collection of available published materials, Riyadh the capital of the country where the ministries and most of the government offices are located was visited. A variety of reports were collected such as:

- 1 - Population Census, 1974.
- 2 - Five National Development Plans, 1970-1990.
- 3 - Socio-Economic Survey of Villages and Hajar in the Kingdom, 1984.
- 4 - Statistical Year Books, 1986/87.
- 5 - Planning and Development of Jizan Province, 1980.

Other reports were also collected from different government departments, in particular the Ministries of Education, Health, and Agriculture, the General Presidency of Girls' Education, and the Saudi Arabian Monetary Agency.

All the published documents obtained from the above sources have

been examined for the spatial structure of development in Saudi Arabia. This examination showed wide disparities among the regions. Clearly the peripheral regions that belong to southern and northern regions seem to be marginally developed.

Information from Local Government Offices

The second aspect of fieldwork was collecting unpublished information from Jizan province. Fieldwork here can be divided into two parts. First, visits were made to urban centres such as the capital of the province where the various branches of ministries and governmental offices are located, as well as to the larger urban centres where municipality departments are to be found. Secondly, visits were also made to the other emirate capitals in rural areas in the three parts of the province (i.e. the plains, hilly, and mountain areas).

During this tour, data was obtained in three ways. First, there was the collection of unpublished government reports from ministry branches and other governmental offices. Second, interviews were conducted with government officers, sub-emirate governors, and general heads of villages. Third, a variety of information was also collected through observation. This information was generally concerned with population, economics, social questions, the physical environment, rural settlements, and public services provision. In fact, the data obtained showed that the spatial distribution of social services and facilities strongly favoured the urban areas, while the small towns in remote rural areas have only limited provision of these services.

Field Survey

The third aspect of fieldwork was concerned with obtaining specific information regarding rural problems relevant to the objectives of this study. In fact, the previously mentioned categories of information do not contain adequate analysis of the rural problems. In order to overcome the lack of data, the questionnaire and sampling procedure were adopted to obtain the primary data relating to the villagers' circumstances.

Questionnaire and Sampling Techniques

The questionnaire survey was used in this study. It was designed to be simple and clear in order to collect useful information. It was also intended to focus on the problems of rural population such as those related to the basic economic activities and provision of public services and facilities. The survey also represented rural movements, rural out-migration, and the main requirements of the rural villages (see Appendix A).

It is obviously impossible for one individual both in terms of time and effort to distribute the questionnaire to all villages and rural population within the study area. Therefore the best way to solve this problem was by using sampling techniques and so making case studies of a small number of respondents selected from different villages. So, a small number of villages chosen with the proper techniques seemed to be adequate to represent the rural problems. Wood (1955, p352) argued that "the aim of any sampling procedure is to draw

sample units which, when grouped together, possess the same degree of diversity as the universe from which they are drawn." Thus, the main objective of sampling is to obtain the required information with the lowest cost and effort.

In sampling techniques, it is useful to distinguish between the target population and sample population. The target population is the population for which we hope to obtain information by selecting a sample, while the sample population is the set of elements or sources from which the sample is actually obtained. It is also important to note that the size of sample is not fixed. That means the sample size in one situation may be inadequate for another. Toyne et al. (1971, p25) point out that "ideally, the sample should be as small as possible so that time and effort may be minimised, but it must still be large enough to yield representative and reliable results."

In fact, there are many methods that can be used in sampling techniques such as random sampling, systematic sampling, and stratified sampling. In this study, the stratified random sampling method was used to select the sample villages and the respondents for interview in the province. This method is more appropriate to achieve geographical coverage of the study areas with less problems than those associated with random and systematic methods. Haggett et al. (1977) mentioned that this method has been used frequently in geographical research. The following analysis will show how this method was used in the selection of sampling villages and respondents.

Choosing the Sample of Villages

Before the analysis of how the sample of villages was selected, there are two important considerations to be taken up. The first consideration is that Jizan province is divided into three different physical units. First, there is the plains area stretching from the seashore to 100 m above sea level. This area accounts for about 55 per cent of rural settlements. Second, is the hilly area lying from 100 m to 900 m above sea level. This area contains about 34 per cent of the rural settlements. Third is the high mountain area from 900 m to 1,800 m above sea level. This area includes 11 per cent of the rural settlements within the province.

The second consideration is that the definition of villages in Saudi Arabia is concerned with settlements that have more than 100 persons and thus have a special name known to these people. Therefore, the selection of the sample of villages was taken from each unit as an independent area, as well as being concerned with settlements of more than 100 persons which are known as villages.

In order to achieve a cross-section of the rural problems in the three units, it was decided to choose eleven villages for detailed interviews: six villages from the plains area, three from the hilly area, and two from the high mountain area. This distribution was made according to physical units and the relative proportion of the rural settlements. The more rural settlements in the area, the more the number of sample villages.

Stratified random sampling techniques were used to select the sample villages in each unit. The first step was to divide each unit into sub-emirates called strata. There were twenty sub-emirates in the plains area, eight in the hilly area, and another eight in the high mountain area.

The second step was to select six sub-emirates from the plains area, three from the hilly area, and two from the high mountain area. To achieve this, all the sub-emirates in each unit were listed on small cards which were thoroughly shuffled. A small card was then drawn to represent the first sub-emirate to be selected. Again the pack of cards was shuffled and another card was drawn to indicate the second sub-emirate to be added. This process was used in the three units for the selection of sub-emirates.

The third step was to select one village from the eleven sub-emirates selected. Again all the villages in each sub-emirate were listed on small cards which were shuffled. A card was drawn randomly to represent the sample villages in each sub-emirate. The distribution of the sample villages is shown in fig.1.3.

The Selection of Households

Stratified random methods were also used to select the rural population for interview. Limited time, individual effort and the similarity of rural problems dictated that 5 per cent of the total village's households would be significant to represent rural problems. The first step was to determine how many respondents should be selected



Fig.1.3 Sample Village studied in Jizan Province

from each village. Five per cent of the total number of households in each village was obtained from the family files which were available at the health centres for each village. (Some villages are not provided with health centres, but the files of the families were available in the nearby health centres.)

The second step was to determine who was to be interviewed in each village. In order to achieve this, all the family files in each village were listed on small cards and thoroughly shuffled. A card was then drawn to represent the first respondent, again the pack was shuffled and another card was drawn to indicate the second respondent. This process was repeated until all the respondents in each village had been drawn. The villages, families, and heads of households interviewed in each area are listed in table 1.1. The total number of those interviewed was 123 households: 67 of them from the plains area, 42 from the hilly area, and 14 from the high mountain area, with an average of 11 respondents per village.

During the questionnaire survey, two particular problems were encountered. The first centred on the deficiencies of the road network, since most of the villages are still connected by earth roads (like the coastal villages) or by rocky roads (in the hilly and mountain villages) making travel very difficult to the sample villages. The second problem was that most of the rural respondents were illiterate, so that a long time was taken up with interviews. Apart from these problems, however, the respondents were very pleasant and co-operative.

Table 1.1 Villages and Respondents Chosen in Each Area

A. Plains Area

Village	No of Households	Heads of Households interviewed
1 - Al Baisri	156	8
2 - Al Arjain	183	9
3 - Al Asamilah	309	15
4 - Al Harjah	278	14
5 - Al Hatan	267	13
6 - Al Hajanbah	159	8
Total	1,352	67

B. Hilly Area

Village	No of Households	Heads of Households interviewed
1 - Gawa	267	13
2 - Al Juwwah	371	18
3 - Sirrain	219	11
Total	857	42

C. High Mountain Area

Village	No of Households	Heads of Households interviewed
1 - Khashir	160	8
2 - Rohan	121	6
Total	281	14

All the data obtained from different sources were drawn together for analysis. Different statistical methods have been used in this

analysis, such as the nearest neighbour technique, connectivity measurement, the chi-square test, and the factor analysis method. Therefore, the results of this analysis of the above would be useful to represent rural problems and to provide development policy through the extension of the urban settlement hierarchy to include small towns, which may serve as important centres and vital approaches for the promotion of rural planning.

1.6 Organization of the Study

The contributions of the study are grouped into three sections. Each section sets out the objective, techniques, data used, the procedure and the assumptions on which the study is based. The first section (Chapters 1-3) treats the theoretical issues and includes a literature review related to development strategies.

Chapter One is the introduction to the study. It contains a statement of the natural problems of the rural areas, the main aims and objectives of the study. Moreover, it provides some key definitions which relate to the study, and finally it enlarges on the techniques of data collection and methodology employed.

Chapter Two contains a review of literature relating to planning and development theories. The concepts and generalizations of the larger urban strategies and their failure to provide a comprehensive development policy are discussed. The chapter also refers to literature concerned with the role of small towns as an important approach in rural development planning.

Chapter Three examines the spatial aspects of Saudi Arabia's regional development planning. Materials obtained from the ministries and government offices are presented in this chapter. It considers the core-periphery relation in respect of spatial disequilibrium in the development process as a result of very rapid growth and economic transition. It also highlights the weakness of regional strategy in relation to rural development planning.

The second section (Chapters 4-9) deals with the study area. It provides background information concerning the physical environment, social, economic, and settlement characteristics of the Jizan province. This section also analyzes the problems facing rural areas, and the failure of existing urban centres to reduce these problems. The material available for this section was collected from the government offices, but the information concerning rural problems depended entirely on primary data collected during the writer's field survey.

Both the general material and the primary data are presented in six chapters. Chapter Four provides a brief review of the background information and its implications for the settlement pattern in respect of rural development. It outlines the provincial setting, physical environment, administrative structure, market system, population growth and the distribution and structure of the work force.

Chapter Five discusses the spatial pattern of rural settlement in terms of types and sizes of villages, their distribution, current changes in the pattern of rural settlement, and finally, the factors affecting the settlement pattern.

Chapter Six examines the problems of the main economic activities focussing especially on agriculture as the basic economic sector. It considers the types of agriculture and the factors affecting agricultural development, noting in particular the traditional and uneconomic farming practices, land ownership problems, shortage of agricultural labour, primitive marketing techniques, and inadequate agricultural support services.

Chapter Seven examines the problems of the provision of public services which include education, health, and road transport.

Chapter Eight also focuses on the rural problems relating to housing utilities and community services, such as electricity, drinking water, waste collection, post offices, fire services, civil affairs, telephone, and social security services.

Chapter Nine attempts to discuss the urbanization process in Jizan province. It examines the growth and distribution of urban centres. It also highlights the relationship between urban centres and rural areas in the province.

The third and final section (Chapters 10-13) sets out a proposed policy for rural development. This section attempts to discuss the importance of lower levels of urban hierarchy for rural development in Jizan Province. The data collected for this section were obtained from the writer's fieldwork and government reports.

Chapter Ten demonstrates the need for a policy based on the

development of small towns, in view of the failure of the few existing urban centres to promote and develop the rural areas. It considers the role of these towns not only in stimulating the rural economy, but also in accelerating the provision of services to the majority of the rural population, i.e. such services as education, health care, and other infrastructured services, which require changes in the traditional socio-economic structure of the rural areas.

Chapter Eleven attempts to classify the small towns according to their potential role for development. The factor analysis method was used to examine the criteria used for classification of small towns.

Chapter Twelve is concerned with the development projects which are recommended to be located in small towns. It also highlights the implementation policy required to make the small towns perform their new role in rural planning and development.

Chapter Thirteen closes the study by setting out an overall conclusion from the study.

CHAPTER 2

Small Towns Strategy: Theoretical Framework

2.1 Introduction

The existing strategies of development in most developing countries have some problems. Most development benefits tend to be concentrated in certain geographical areas. One or a few urban centres dominate the national economy and overshadow all other centres in the spatial system. Moreover development planning is urban oriented and in practice the larger cities receive the largest share of national investment, significantly beyond the proportion of their population, as regards physical infrastructure, commercial and social services, thus becoming enclaves of urban modernization in the nation. The dualistic nature of economic growth in developing countries has been noted by many scholars, for example Gilbert (1982, p27) wrote that:

throughout the Third World there is a clear tendency for industry, commerce, agriculture and other economic sectors to concentrate in particular regions. Certain areas are dynamic whilst the economies of others are growing slowly or even declining. Associated with this tendency is a marked trend for population of Third World countries to become more spatially concentrated, migrants move from declining to dynamic regions, from rural to urban areas, from small cities to large.

However, the majority of people in these countries still live in rural areas. The small towns, the interface between rural and urban areas, until recently have received relatively little attention. In addition, the distribution of social and economic activities to these centres is retarded. In fact, the development of major urban centres

has not been carried out hand in hand with the development of agricultural rural areas. These problems can be reduced only by planning at the local level, with emphasis on small towns in order to provide the services, facilities, and economic activities that can promote rural and regional development.

Indeed, the spatial disproportion between urban and rural areas is wide and in many instances rapidly increasing and as may be expected, but the policy of development, as Johnson (1976, p162) said, "is not how to eliminate these differences, since that is probably impossible, but how to reduce them, if that can possibly be done, and how to prevent them from becoming wider." Before we examine the vital strategy that might reduce the wide geographical disparities, it is important to note the theoretical models which purport to explain the processes of spatial disparities and urban polarization.

2.2 Regional Development Theories

The period since 1950 has been distinguished by the extensive discussion of regional economic development, and consequently of how far the promotion of elements of development has helped to satisfy needs among regions and societies. During this time many countries have adopted the concept of 'centre-down paradigm' as a tool of economic and even social transformation at the regional level. The origins of the centre-down model are to be found in the term growth pole as used in the papers of Perroux (1955). He believes that:

Growth does not appear everywhere at the same time, it manifests itself in points or 'poles' of growth with

variable intensities; it spreads by different channels and with variable terminal effects for the economy as a whole.
(Brookfield, 1975, p91)

The growth poles were defined as centres (poles or foci) from which centrifugal forces emanate and to which centripetal forces are attracted. Each centre, being a centre of attraction and repulsion, has its proper field which is set in the field of all other centres (Darwent, 1969, p6). Perroux emphasizes the concentration of activities in specific places and the variation of growth rates from sector to sector. However, dominant economic units appear to play a major role in Perroux's explanatory framework.

Another key element of the notion is the emphasis placed on the size of the pole (industry). The rate of growth or change is supposedly directly related to the size of the industry, since the bigger it is, the larger will be its field of dominance over other industries which sell to it or buy from it (ibid, p6).

The concept of the growth pole was also expressed by Myrdal (1957) and Hirschman (1958), who both believed that development is necessarily geographically unbalanced, that is to say it is a process whereby one region as a growth centre, being advanced and developed, controls the rest of the nation by two processes:- 'polarization and trickling down'.

Myrdal concentrated on the problem of inequality in economic development between advanced and poor countries. He started by discussing the vicious circle of poverty and its disadvantages. In addition, he (1957, p9) criticized the theory of international trade in

the following terms:

the theory of international trade and indeed, economic theory generally were never worked out to serve the purpose of explaining the reality of economic under-development and development.

From this starting point, he developed his theory of cumulative change, emphasizing that the principle of interlocking circular interdependence within a process of cumulative causation should be the major points in the consideration of under-development.

According to Myrdal, the spatial differential in economic development in a nation can be explained by the interaction of the concept of 'backwash and spread effects'. These concepts correspond closely, in fact, to Hirschman's concept which will be noticed below. Myrdal suggests that when economic activity tends to be established in a certain region, this favoured region will create negative effects in other regions. He (1957, p27) noted that:

"It is easy to see how expansion in one locality has backwash effects in other localities. More specifically, the movements of labour, capital, goods and services do not by themselves counteract the natural tendency to regional equality. By themselves, migration, capital movements and trade are rather the media through which the cumulative process evolves - upwards in the lucky regions and downwards in the unlucky ones. In general, if they have positive results for the former, their effects on the latter are negative. The localities and regions where economic activity is expanding will attract not immigration from other parts of the country. As migration is always selective, at least with respect to the migrant's age, this movement by itself tends to favour the rapidly growing communities and disfavour the others.

He also maintained that backwash effects are not only related to

but also to non-economic factors,
economic factors, such as the poverty in social infrastructure services in hinterlands.

Another key element in Myrdal's models is the concept of spread effects which run contrary to the backwash or polarization effects. They tend to diffuse economic activities into other regions. Myrdal suggested that the spread effects will be stronger when the economic development level of a country is higher. Undoubtedly, the backwash effects in developing countries are more obvious than spread effects which appear in only few developing regions or certain areas while the remaining regions are less developed or continue backward. He (1957, p34) noted that "in contrast, part of the course of a low average level of development in an under-developed country is the fact that the spread effects there are weak." This, in fact, creates regional inequalities and urban rural disparities.

Another model which is similar to Myrdal's concept was published by Hirschman. In this model, he suggested that economic growth begins at certain places. This means that development should be concentrated in a few sectors and then spread to the hinterland by 'polarization and trickling down.' According to this mode, economic processes do not appear everywhere at the same time and powerful forces make for a spatial concentration of economic growth around the initial starting points. Advances and development in the centre ('called north') influence the lagging regions ('called south') by the two processes of polarization and trickling down. The favourable trickling down effects are generated by purchases and investments placed in the hinterlands by growth points. The growth points may depress progress in the

hinterland and at the same time create a drift of people from the hinterland. Hirschman noted that:

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 'growth points'. 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. This type of migration may actually be undesirable not only from the point of view of the south but also from that of the country as a whole.

Despite the similarities between the models of Myrdal and Hirschman, there are some differences. For example, Hirschman was more optimistic about the long-term future of the underdeveloped countries, and he suggested that when polarization exceeds the trickling down effects, political action will seek to redeem the balance.

The first attempt to explain economic growth in relation to the problems of regional allocation of investment was made in the contribution of John Friedmann by analysis of the core-periphery model. Friedmann (1966, p53) believed that:

an effective regional policy must deal as a system with the separate development of core regions, upward - and downward - transitional areas, resource frontiers, and spatial problem areas.

Darwent (1969, p17) summarized his efforts in the following words:

He addresses himself squarely to the real problems of regional development in geographic space, and via his 'centre periphery' formulation emerges with an ascent theory of 'polarized development' which will ultimately cover not only the narrow range of the economic variables

but also explicitly social, political and cultural developments in geographic space.

The core region has the characteristics of a major centre but on a larger scale. It will consist of one or more clustered cities, while all other territory consists of peripheral regions, which are dependent on the core regions. Moreover, core regions are located within the nested hierarchy of a spatial system and perform a critical role in the process of industrialization, trade, finance and government activities. On the other hand, peripheral regions are dependent on core regions by virtue of supply and market relations as well as administrative organizations. The processes bringing about a core-periphery structure are similar to the Myrdal/Hirschmann models but extended by notions of dominance dependency relationships.

Indeed, Friedmann developed a general approach in the spatial aspects of regional economics as a comprehensive hinterland development model. However, in developing countries the main problem is the need to reconcile growth and equity goals. The spread of innovations from the core to the peripheral regions may be ineffective because of weaknesses in communications and transport. Thus, this model leads to inequalities which are the problem of the spatial pattern in developing countries.

Boudeville was another writer who was greatly influenced by the growth pole concept. However, he attempted to extend and explain the connection between the conditions for the existence of a pole concept and the conditions for its appearance and location in geographic space as a centre (Darwent, 1969). He believed that polarization involves

the notion of hierarchy. Therefore, the growth pole concept was carried much further to explain central place systems. Boudeville (1966, p10-11) explained that:

The polarization concept would be of no practical value unless the interdependencies and hierarchy which it discovers were the expression of stable relations... A regional growth-pole is a set of expanding industries located in an urban area and inducing further development of economic activity throughout its zone of influence.

The concept of the growth pole has been widely accepted by regional planners though their adopting growth centre strategy. The main object of this strategy is to bring the growth and allocation of investments away from the growth pole of big industries as a basis for growth. Hansen (1972, p103) explained this concept of growth centres when he wrote: "For the most part they have been designed to promote the development of lagging regions by concentrating investments so as to reap scale and agglomeration economies."

Cloke (1979, p30) argued that:

The growth centre concept can be seen to have detached itself, at least in part, from the theory which gave it birth, and this has led to growth centres themselves being variously defined with each definition placing more or less emphasis on the question of scale.

In recent years, growth centre strategy has been applied in many countries in order to stimulate the development process in the remote lagging regions, as well as to reduce the high concentration of investments in a few metropolitan centres. For example, in Saudi Arabia the government recognizes the problems of the high concentration

of economic and social activity in larger urban centres, which indeed has created a wide gap between not only regions but also between urban and rural areas. Therefore, within the regions, Saudi Arabia's development plans since 1980 have adopted a strategy in order to further decentralize urban growth centres. Thus, a three-tier hierarchy of development centres (national-regional-local) has been established (see chapter 3).

Indeed, one of the most valuable aspects of the growth centres policy is to break down the central place structure of the growth pole concept in order to reduce the problems of polarization, but the nominative value of the growth centre strategy in regional development, particularly in lagging rural areas, is still limited. This weakness is based on its inability to benefit the majority of the rural population or to stimulate the rural economy. Darkoh (1977) pointed out that the use of growth centre strategies has not been notably successful, particularly in developing countries. This weakness may be due to the situation of poor accessibility which indeed prevents larger rural populations from benefitting from services and facilities that are available in these centres.

2.3 Central Place Theory and Settlement Hierarchy

The population size of urban centres has been considered as an important factor in terms of the rank of urban settlements. Zipf (1941) stated that the rank-size relationship mathematically in the formula $p_i = K/r_i$, where p_i refers to the population of a centre designated as i/r to its ranks in size, and K to the population of the

largest centre. While Zipf advanced the concept of rank-size regularity to describe the distribution of city-size, Jefferson (1939) developed the concept of the "primate city". According to Jefferson, primacy appears when the largest city has several times the population of one that is second in rank. Later authors have applied the term to the whole distribution of cities of different sizes. According to these authors, primacy exists when a stratum of small towns and cities is dominated by one or more very large cities and there are fewer cities of intermediate size than would be expected from the rank size rule, Berry et al., (1970, p64-66).

Moreover, Berry et al. (1970, p66) argue that rank size regularities have been associated with the existence of integrated systems of cities in economically advanced countries, whereas primate cities have been associated with "over urbanization", with the superimposition of colonial economies on underdeveloped countries, and with political and administrative controls of indigenous subsistence and peasant societies.

The model of city-size distribution has been used by Barry and Horton (1970) in 38 different countries. Their results indicated several types of city size distribution on a scale between the limiting cases of primacy and lognormality. Therefore, they suggested fewer forces would affect the urban structure of a country, viz: (1) the smaller the country is, (2) the shorter the history of the urbanization in the country is, and (3) the simpler is the economic and political life of the country and the lower its degree of economic development.

Clearly the model of city size which groups urban centres by way of population size, is convenient for demographic analyses, but conveys no information about the economic and social character of the places themselves (Leslie, 1984, p20). Therefore, an urban hierarchy which is associated with economic and social activities would significantly influence the settlement policy in terms of planning and development.

The most generally recognized of the spatial theories is Christaller's (1966) 'Central Place Theory', which has been refined and improved upon by Losch. The theory requires the examination of settlements as a system. The cornerstone of this theory is the idea of functional interdependence between centres at different levels in the hierarchy and between a town and the surrounding area.

The first element in this theory is the concept of central places, which are decidedly important to the meaning of settlements. Thus, the central place functions is any activity carried on in the urban centre which derives at least part of its support from people living in the rural areas around the centre (Leslie, 1984, p21). The degree to which settlements acts as central places depends on their populations, concentration of diverse basic functions, and the degree of convenience of their locations. Therefore, larger central places offer greater opportunities for multiple purpose shopping trips than do the smaller places and may result in prices for a particular good being lower in larger places than in the smaller. Similarly, the range of goods on offer in a large place may be greater than it is in a smaller place (ibid, p31).

The second element is the use of centrality measurement. The quality, which refers to the variety of services, and the quantity, which refers to the size of the place, lead to determining the degree of centrality of settlement. The third element is the hierarchy of central places which are arranged according to the grade of the centrality of places. Certain aspects of services and functions may appear to be of a higher order in larger urban places, while at the same time, there is a lower order of services in small centres. Therefore, there would be a hierarchy of urban centres differentiated not only by their size but also by functions they offer. Generally, the higher order centres contain more functions than those possessed by lower order centres. Table 2.1 shows the levels of the hierarchy of centres.

Table 2.1 Steps of the Hierarchy

Order of Function	Level of Centre						
	Hamlet	Village	Town	Small City	Regional City is	Regional Metropolis	National Metropolis
Lowest	x	x	x	x	x	x	x
2		x	x	x	x	x	x
3			x	x	x	x	x
4				x	x	x	x
5					x	x	x
6						x	x
7							x

Source: B Berry, 1967, p16

Central place theory could make an important contribution in regional planning. Glasson (1978, p163) identifies two potential

roles: firstly it could act as a framework for understanding the regional spatial structure, and secondly as a model for future planning. Woodruff (1967, p6) also points out that:

The theory associated with location and status of central places would seem to be an essential starting point for planning the size, function and growth pattern settlement in any rural sub-region or in the rural parts of city regions.

For planning purposes, a hierarchical system of centres is necessary for the provision of social and economic services to populations who live in small rural settlements. The role of settlement hierarchy in regional planning has been asserted by Leslie (1984, p72) when he wrote that:

The reference to central place theory in such planning endeavours typically has implied an acceptance of the idea that a well-developed, hierarchical central place system is in some sense an efficient arrangement that is likely to have a positive or beneficial effect upon the economic development of the region in question.

Therefore the application of the concept of settlement hierarchy in regional planning requires the establishing of a fully integrated settlement system from metropolis to small centre.

2.4 Urbanization and Spatial Patterns of Development

It is widely recognized that the process of urbanization is essential for economic and social development. However, the spatial dimension, particularly in developing countries, had not received much consideration in strategies to reduce the wide geographical disparities

and imbalances among their residents. Evidence shows that investment in productive activities, infrastructures, services, and facilities has generally tended toward concentration within the largest cities, in the belief that the higher returns obtainable in these major centres would accelerate economic growth whilst benefits would 'trickle down' and spread out, hopefully to small towns and rural areas.

Unfortunately, this strategy has succeeded only partially and still lacks complete success. Consequently, the urbanization pattern in these countries is characterized by glaring disparities of provision between urban and rural areas and excessive concentration of activity in larger urban areas. The smaller towns, with which the rural population has contact, have been neglected and their role in the process of development has often been overlooked. Consequently, the benefits of services provided from urban centres have often failed to reach large groups of the rural population at a low level of settlement hierarchy. The urban concentration has tended to make the urban centres like "enclaves surrounded by a hostile peasantry, and they are seen as 'beach heads', centres of modernization which act as catalysts for economic growth, the centres from which the benefits of modernization flow outwards to revitalize the stagnating agricultural sector." (McGee, 1971, p13)

The perceived result of the rapid polarization in developing countries has to be assessed in terms of its effects not only on the economy, but also on society. In rural areas, the traditional agricultural sector operates in small family units, where there are low levels of income and activities are principally aimed at subsistence.

The type of society here is also indigenous and traditional. On the other hand, in larger urban centres, the economy operates in large units with much capital investment and advanced technologies. This type of society is also characterized by an imported social system from the west. Mountjoy (1982, p90) explained this phenomenon in developing countries when he wrote:

The growth centres reflect the coming into play of advanced technologies and capitalist forces, which are demonstrated in the evolution of economies quite distinct from the traditional subsistence way of life of the peripheral areas.

In fact, the strategies of larger urban centres have not addressed the problem of spatial disparities in developing countries. Hansen (1981, p32) points out that:

Gaile (1973) for example, reviewed seventeen different studies of attempts to implement growth pole strategies and concluded if a trend was discernible, it was that spread effects were smaller than expected, limited in geographical extent, or less than backwash effects.

Obviously, the spread effects from larger urban centres are not strong enough to offset the adverse effects of polarization and to bring about significant changes in living conditions among the majority of rural populations. This fact has been emphasized by many scholars. For example, Hansen (1982, p302) asserts that:

The trickling down of modernization has not reached the poor strata, especially in rural areas, or at best has yielded then no more than marginal benefits. Too often the promotion of industrial growth has not significantly increased employment; meanwhile the rural poor continue to have weak links to the organized market economy and own

little in the way of productive assets. Moreover, regional income convergence could still be consistent with little gain in, or even a lowering of the real incomes of the poorest groups, with a worsening of real income disparities in the poorer regions.

Undoubtedly, the massive concentration of activity in one or two centres with fast rates of growth has led to the urban areas being more dynamic, while many rural areas are still decaying and underdeveloped. The result is that many people have migrated from rural areas to the rapidly growing urban centres, either to find employment or benefit from the social services there. Thus urban centres have become more populated with much faster growth rates at the expense of the rural and agricultural sector. Gugler (1988, p1) argues that:

More than a billion people live in the cities and towns of the Third World. Their numbers are growing rapidly in almost every Third World country. These cities are outstripping their First World counterparts. The twentieth century is the century of the urban transition, by the end of the century nearly half the world's population, close to three billion people will live in urban settlements and two thirds of that number will live in less developed countries.

In fact, the government's policies have succeeded in making the urban areas more attractive to the rural population by massive concentration of social and economic services. Preston (1988, p11) emphasizes that:

Part of the concern with population distribution reflects a belief that current redistribution patterns, particularly net migration from rural to urban areas, are a product of unjustifiable regional and sectoral distortions in patterns of development.

He also noted that:

Primate cities in developing countries are said to be drawing a disproportionate influx of population from other areas. Their rapid growth is alleged to result from biases in patterns of government expenditure and employment, in part resulting from the undue political influence of these agglomerations.

Neglecting the rural area in the process of modernization and economic development results in more rural population moving to the developing and dynamic areas. In fact, the trend of movement is often not step by step from village to nearby town, but directly to metropolitan centres. Flint (1987, p66) explains this type of movement both in developed and developing countries as follows:

In the past movement to cities tended to be a series of two or three short distance moves, i.e. step by step. This pattern of movement is typical of urban migrations during the nineteenth century in Europe, but is not the case in the developing world.

This is true because rural areas in developing countries contain a high proportion of very poor people. They have lower incomes than those in urban areas; they also have an inadequate provision of services and facilities. Some of the migrants to large urban centres undoubtedly earn more, and live in much better conditions than they had in the rural areas.

The problem of disparities in developing countries is more obvious in those which have experienced rapid transformation in the economic sector. There is evidence to suggest that the imbalance of development is due to an insufficiently well articulated spatial system

and the lack of emergence of a hierarchy of different size settlements for forming specialized functions and linked in the form of a beneficial system. The target mass of population must benefit and be directly involved in development efforts from the outset, instead of being treated as mere passive recipients of benefits that may or may not trickle down from larger urban centres (Hansen, 1982). Thus, regional planning requires the integration of urban centres within the rural hinterland, enabling small towns to raise the base-line of social and economic conditions in rural areas.

2.5 The Policy of Small Towns

In developing countries, the major problems is that the spatial structure of development processes has been concerned with larger urban centres, which has led to a widening gap between the lower levels and the higher levels, the latter being unable to diffuse the development services to the bottom of the social and economic ladder.

Clearly, there is a wide difference between the developed and developing countries in terms of the distribution of central places. Johnson (1976, p171) points out that:

In developed countries, the varied hierarchy of central places has not only made possible an almost complete commercialization of agriculture but has facilitated a wide spatial diffusion of light manufacturing, processing and service industries.

On the other hand, the neglect of central places by developing countries in their planning has led to low levels of resources, low

opportunities of employment and low standards of living. Consequently, these countries face the risk of rural migration to larger urban centres at the expense of the agricultural sector.

Indeed the urbanization process in developing countries has not been manipulated or organized so as to create an efficient spatial settlement system. Johnson (1976) shows that the ratio between village and urban centres is an indicator of the degree of central place abundance or deficiency. He notes that developed countries have a very low ratio, while developing countries are characterized by a high ratio. For example, Europe has ten times as many central places as the Middle East. What seems to be needed is a clearer understanding of the lower level of the settlement system, which would provide adequate direction from regional development objectives. Indeed, reliance on the lower level of settlements would not only stimulate the rural economy, but would improve the living conditions of the rural population by providing services and facilities to places where such activities are feasible and where commuting and service provision are easily accessible to the majority of the population. Rondinelli and Ruddle (1978, p77) emphasized this concept when they said that a:

More balanced spatial system can be achieved in most developing countries building from the bottom up by stimulating increased population, employment and development in rural areas, and extending to small settlements the services and facilities that will encourage increased productivity and the consolidation of rural population into larger economic centres.

In fact, literature on small urban centres in developing countries indicates that these towns could play a positive and

effective role in further regional planning in general and rural development in particular. These towns could act as rural service centres and channels for distribution of economic and social services that are needed in rural areas. Interest in this approach stems from the failure of the large centres to generate development in rural areas, as well as from the fact that wide disparities between urban and rural areas have emerged as a result of applying insufficient planning strategy. Southal (1979, p49) asserts that:

The provision of roads, dispensaries, schools, banks, electricity, water and other basic services are essential services for development. If large urban centres have not generated these development in rural areas, it is assumed that small centres will do it.

Moreover, the major considerations on the policy of small towns for regional planning have been noted by Hardoy et al. (1986, p1) who observed that thereby a better understanding of how performance of regional development can be improved and how a more equitable spread of increased production benefitting people with access to basic social and physical services, and an adequate stable livelihood can be achieved.

Clearly, the rural populations of most developing countries still suffer low standards of living and are engaged in traditional agriculture generating low productivity and income. Development objectives should improve the rural conditions by providing economic activities and social services that would release the populations creative energies. These development services should be located in small towns which are accessible to the rural population. Funnell (1974, p2) explained the advantages of this when he noted that:

Service centres help to pinpoint the channels through which the basic distribution process takes place whilst also being a significant component in the pattern of real income through the provision of the welfare functions. In addition, they are often included as a component in studies of modernization. They are assumed to have a positive effect upon their hinterland by the places where development benefits contacts between urban and rural areas assisting in the innovation process.

Since small towns are increasingly seen as the vital points in planning and developing rural areas, and great interest has been focused on the significance of their potential with vast rural populations being directly involved in development efforts, it is important to develop these centres by expanding the urban system into a lower level of settlement. The principal justification for this strategy is the improvement of living conditions for the population at the bottom level in the settlement hierarchy. According to J Knesl (1982, p16):

The development of small towns acquires a new significance, not so much as conduits for faster withdrawals to the core regions and for unequal exchanges with the latter, but as genuine service centres that offer their location, their linkages, and agglomeration economies to support economic, social and cultural activities at the scale of the village or the urban neighbourhood.

Literature on urbanization problems in developing countries generally assigns to small towns, a positive role in furthering rural development by means which are briefly listed below:

1. Small towns play an important part in providing growth impulses in the right places and proportions for the maximum utilization of multiplier effects of the proposed development plans.

2. They can play an important role in correcting uneven economic growth. Development planning in developing countries has been urban oriented, leaving rural areas in primitive conditions. This situation has created problems not only in urban areas but also in rural villages. Decentralization of economic activities, which reduces urban congestion as well as regenerating the countryside, must be based on development planning of the small town, which can absorb a large proportion of the present and the future rural migration.
3. They can play a major role as market places if they are made more accessible and therefore more effective by the construction of linkage roads, conveying fast-moving transport, and of storage facilities. These measures enable small towns to offer rural areas access to higher urban services.
4. Small towns can diffuse the necessary social services and facilities (including education, health and communications) to the rural population because of their convenient locations.
5. In the traditional sector of self-sufficient agriculture (which in most developing countries is felt by the populace to be undesirable), the developing small town will lend support by a free flow of credit, and the provision of other commodities and facilities such as seeds, fertilizers, pesticides, machines, and technical expertise.
6. Small towns can promote national or regional spatial integration.

They may contain co-operative organizations which are required to expand participation in the development process through a mixture of both bottom-up and top-down policies on regional planning.

2.6 Conclusion

The major problem of developing countries is the wide disparity between conditions in urban and rural areas, a problem which has emerged in consequent of an inadequate strategy focusing on major urban centres for development. Experience has shown that these urban centres are unable to diffuse benefits to those at the bottom of the social and economic hierarchy. Hansen (1982, p320) noted that "human resource development needs, which are particularly great in lagging regions, have been neglected or dealt with in ways that are inappropriate to local realities." Through neglecting the lower level of the settlement hierarchy, the rural population has tended to flock to the urban centres where the benefits of development are presumed to exist and be available, but the consequences have been increased physical, social, and economic problems.

Since urban centres have failed to solve the rural problem, it remains a desirable goal to improve the lower level of the settlement hierarchy. Small towns would therefore appear attractive for consideration in any strategy for planning and development in rural areas. These centres are linked with traditional agricultural production and at the same time they provide a decentralized network of activities that opens the door for a large portion of the rural population to obtain economic and social opportunities as well as

access to urban services and facilities.

This study is concerned with small towns and their potential role as an instrument of policy for regional and rural development in Jizan province. Several assumptions may be drawn from our examination of the background to the introduction of such a policy:

1. Larger rural areas in the province are not served by the existing few urban centres, which means that the majority of the rural population have limited access to urban services.
2. The lower level of the urban hierarchy where the majority of people come into contact with each other seems to have been neglected in development proposals or to have been only marginally touched by development services.
3. Small towns have different origins which range from important markets to local services centres. So, provision of services and facilities according to their potential would ensure that services are provided in most strategic centres.
4. At present, the function of small towns in rural development is clearly still weak, because they have been inadequately provided for in development programmes.
5. The rural population themselves consider these centres as central places for some economic and social functions. This established characteristic could help speed the development process if these

towns were better provided with development services.

6. By developing small towns, the structure of settlement hierarchy in the province would be fully integrated and rural areas would become linked with urban centres.

It may be concluded that the policy of small towns involves an understanding of the regional development policy in the country and its weakness in rural development. This discussion will be taken up in the next chapter.

CHAPTER 3

Spatial Aspects of Saudi Arabia's Regional Development Planning

3.1 Introduction

The spatial pattern of development in Saudi Arabia, as in many other developing countries, has been characterized by wide differences between what occurs in major urban centres and in the rural areas. This difference can be seen in the high concentrations of economic and social activities in the urban centres, whilst the rural areas remain neglected and most of their population continue to live by traditional subsistence methods at a low economic standard.

Since the discovery of oil, the economy has undergone a rapid transition from traditional to modern enterprises. This rapid transition has had a great impact not only on the traditional economy, but also on the demographic and social pattern. The middle belt, Western, Central and Eastern regions, particularly their urban centres, are more dominated by social and economic activities than are the peripheral Southern and Northern regions.

The government has, however, been striving to narrow the wide disparities between urban and rural areas. It has initiated a system of development centres in order to distribute the development process to peripheral areas. However, these centres are concerned with larger urban centres, while the lower level of the settlement hierarchy, which is the major factor for rural development, is still overlooked.

3.2 Stages of Economic Growth

The economy of Saudi Arabia has developed from traditional and limited production to a modern level of industrial activity.

Before 1945, the economy was based essentially on three kinds of activity: pastoral, subsistence agriculture, and simple trades and services. In Al-Hijaz region, where the holy places are located, people were engaged in supplying various services to the pilgrims with additional commercial activities. The second kind of activity was agriculture. It is obvious that most of the country is desert and sandy, in addition to suffering from a harsh climate and shortage of water; thus agricultural lands are limited.

In the southern part of the country, particularly in the southern Tihama, the natural resources provide a potential for agricultural production more than in any other part of the country. However, despite the potential of natural resources, the level of production is limited still by inaccessibility of modern services and technology. The remaining agricultural land in the country is characteristically composed of small arable lands limited primarily to oases, as in the areas of Al-Qasim and Al Hasa, where dates have provided the main crop. The third part of the traditional activity was related to pastoral activities in regions where the rainfall and soil are less sufficient.

Generally speaking, before the discovery of oil, the economy was characterized by shortages of natural resources, so that it fluctuated considerably from year to year depending on the volume and distribution

of rainfall. These fluctuations could also be blamed on the serious shortage of investment capital and the virtual absence of communications between the small and scattered town markets. In addition, the low level of skill and labour productivity in the crafts, agricultural and services were also partly responsible.

Table (3.1) Oil Production and Revenues in Saudi Arabia 1950-1986

Year	Crude Oil Production (Millions of barrels)	Oil Revenues (Millions \$)
1950	200	57
1952	302	212
1955	357	340
1962	866	410
1965	805	663
1968	1114	926
1970	1387	1214
1971	1741	1885
1972	2201	2794
1974	3095	22573
1977	3358	36540
1980	2367	84460
1981	3586	101813
1982	2367	70478
1985	1001	25928
1986	1459	18060

Source: Compiled from R El Mallakh (1982) and the Saudi Arabian Monetary Agency (SAMA), Statistical Summary (1988).

The second stage of economic development can be considered to have occupied the years 1950-1970. This stage may be characterized as transitional from the traditional to the modern economy with high revenues. The year 1950 was the turning point in the history of development in the country when oil had already become the main economic source after many centuries of low living standards and self-sufficient production. Table (3.1) summarizes the rise of oil revenue

since 1950. The oil revenue was \$57 million in 1950 and in 1952 it doubled, reaching \$212 million. After ten years, in 1962, the oil revenue doubled again to reach \$410 million. By the end of this period, in 1970, the oil revenue reached \$1214 million.

The oil revenue during this period contributed to the success of the stabilization policy and enabled the government to develop the economy outside the oil sector and to improve the infrastructure . So, for instance, the budget allocation for expenditure on development projects rose from \$24 million in 1960 to \$570 million in 1969. In fact, the cumulative affect of such development expenditure, together with rising government consumption expenditure and rising private income, has been to infuse the economy with a certain degree of dynamism. (Asfour, 1972, p371)

It is obvious that the modern sector was developed by the introduction of non-indigenous skills and capital and remains very largely isolated from the rest of the economy. In fact, the new transition in the level of economy has shocked the traditional economy, particularly the agricultural sector. For example, in 1936, agriculture contributed about 79 per cent of the gross domestic product (GDP) (Al-Ageili, 1986, p66), but this percentage has decreased over the years to reach 5.7 per cent in 1970. (El Mallakh, 1983, p84)

Ramon (1975, p76) points out that during the period from 1962 to 1972, the ranking of the agricultural sector by percentage contribution to GDP, indicated a marked change from second place (with 10 per cent) in 1962, to eighth place (with 2.8 per cent) in 1972. The creation of

a Central Planning Organization was one of the major achievements of this period; it later developed into the Ministry of Planning.

The third stage began in 1971, when a significant increase in oil production and revenue brought the country to a crossroads of economic development. Table (3.1) shows the components of oil production and revenue. In 1971, the oil revenue was \$1,885 million and this number doubled in 1972 to reach \$2794 million. The dramatic price rise in oil in 1974, resulted in a significant increase in oil production. In 1974, the oil revenue increased to \$22,573 million, it reached \$84,460 million in 1980, and \$101,813 million in 1981.

Actually, after 1982, there was a drop in the total production and oil revenues due to the fall in both the quantity of oil exports and world oil prices. Indeed, after 1970, the economy of the country increased rapidly. For example, the nominal GDP was growing at an annual rate of 26.7 per cent, compared with only 10.8 per cent before 1970. (El Mallakh, 1975, p76) In fact, during this period the government launched five-year plans. The first plan covered the period 1970-75 and its primary purpose was to lay a firm infrastructure function for future development. The second plan, for the period 1975-1980, was more ambitious in accelerating the development of physical and social services. The country was striving for the diversification of its economy by establishing new industries which would enable it in the long term to lessen its reliance on petroleum as the major economic impetus. In 1975, the Royal Commission was responsible for developing two industrial complexes, at Yanbu and Jubail. In 1976, the Saudi Arabian Basic Industries Corporation (SABIC), was set up.

The agricultural sector has been one of the slowest growing sectors, its share in GDP falling from 5.7 per cent in 1972 to 3.2 per cent in 1978. (Ibid; p80) Moreover, there was a strong movement of labour away from agriculture, with over 15 per cent of the labour force leaving agricultural employment, which was due to the attraction of higher wages in the construction sector and in industrial employment. (Presley, 1984, p12)

Generally speaking, the period after 1970 witnessed the implementation of objectives in diversification into new industrial sectors. The preponderance of petroleum industries has given ground to modern manufacturing as a major sector. Moreover, major advances in economic and social welfare have been rapidly made. Indeed, with this new transition the situation of the Saudi Arabian economy appears to fit what Rostow calls the take-off stage of modernization. (Rostow, 1971, p5) However, as a result of this new transition, the spatial structures of economic and social development have been characterized by imbalance and wider regional disparities. These differences can be described in the following analysis.

3.3 Analysis of Regional Structural Differences

Saudi Arabia is geographically divided into the five regions: Western, Central, Eastern, Southern and Northern as shown in Fig. 3.1. These major regions are administratively divided into fourteen emirates, or provinces (Fig. 3.2) and are each divided into smaller sub-emirates. Potentially, each region, emirate, and sub-emirate constitutes a planning unit.

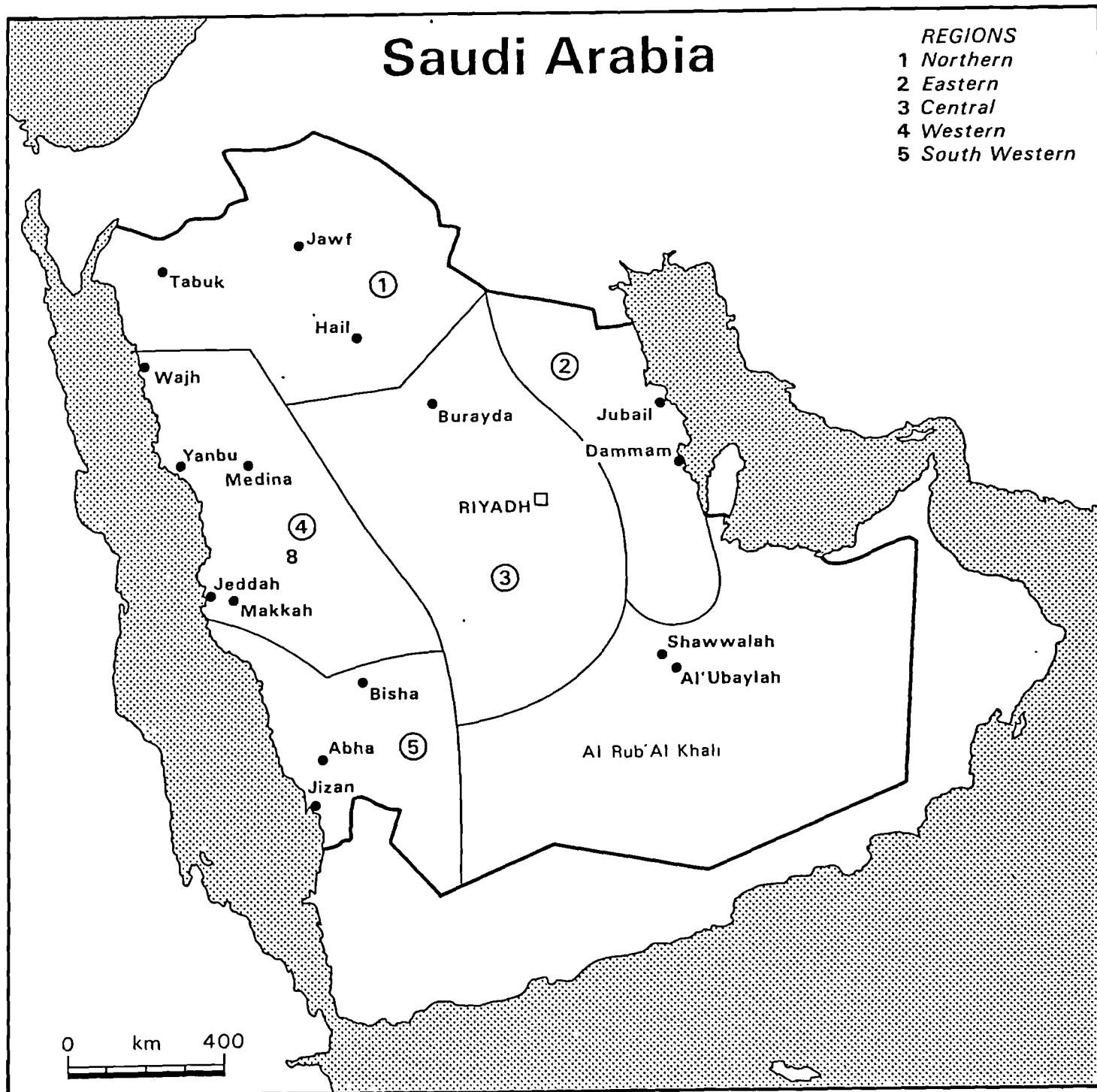


Fig.3.1 Regional Planning Divisions of Saudi Arabia

Source. Fourth Development Plan

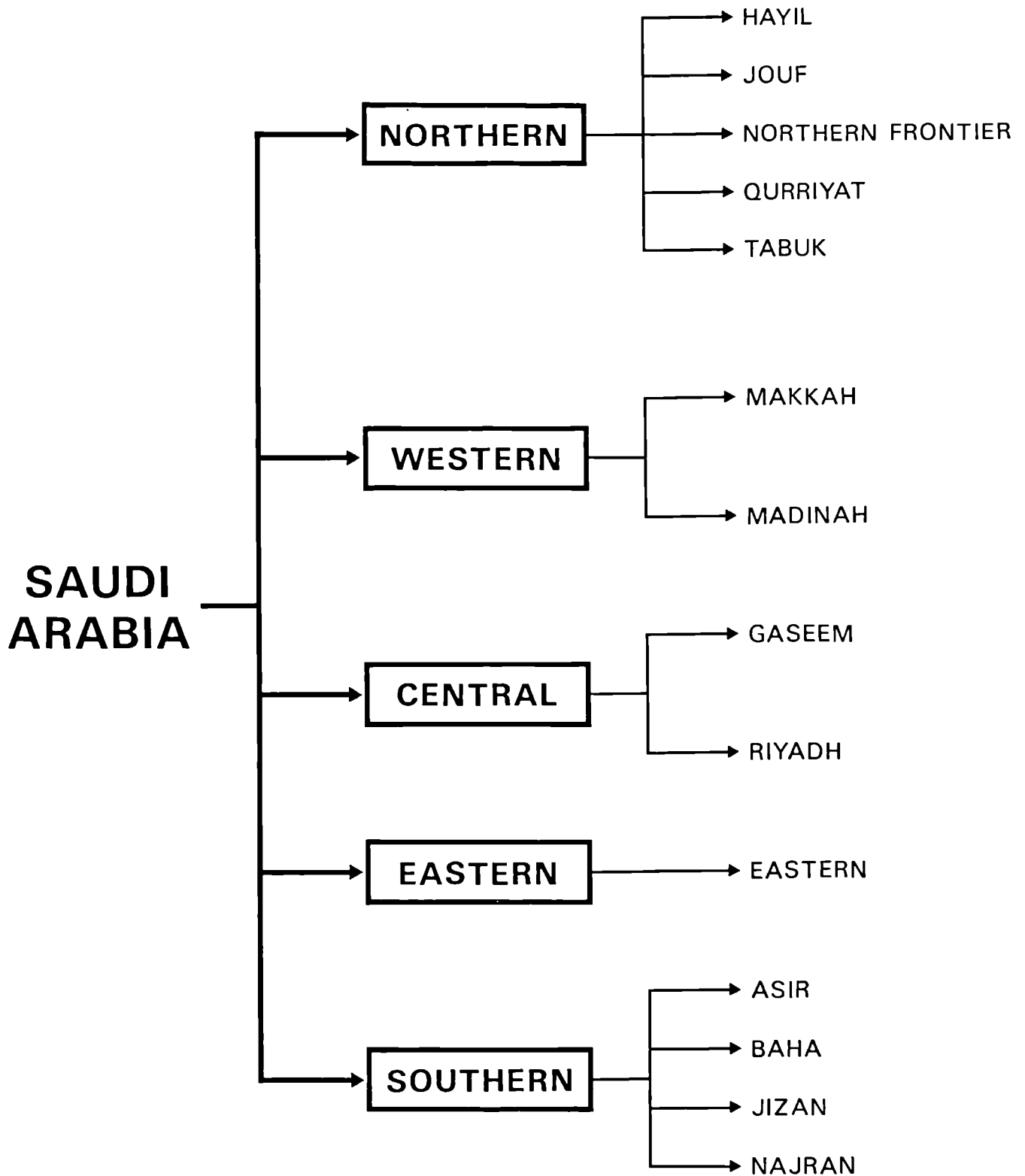


Fig.3.2 Administrative Divisions of Saudi Arabia

In the past twenty years the Saudi economy has witnessed vast and rapid transformation and structural socio-economic changes. The result is that the spatial economic structure in the country has been changed rapidly and has become more polarized, with regional variables beginning to appear wider in the form of disparities in economic and social conditions between regions and from urban to rural populations. Al-Ibrahim (1982, p328) noted that "there are two major spatial problems in Saudi Arabia: imbalanced, polarised and concentrated urban development pattern, and wide disparities in income and social welfare between regions and within regions as well."

Indeed, some regions are developing and urbanizing rapidly as core regions, while others remain relatively underdeveloped as peripheral regions and generally marginal in relation to the national development process. In fact, modern economic and social activities tend to be concentrated in large urban centres of the middle belt in the Western, Central and Eastern regions, while Southern and Northern regions remain backward and practically untouched by industrialization and adequate services. The core regions have a high share of growth in the level of economic services, urbanization, national, secondary, and tertiary activities, whilst the peripheral regions are characterized by the main share of the traditional agricultural sector, lower per capita income, lower levels of urbanization, higher percentage of illiteracy, and a high share of outward migration. The third development plan noted that the five regional studies of socio-economic conditions which have been sponsored by the Ministry of Planning and parallel work by other agencies show that there are significant regional imbalances in terms both of the structure of economic activities and of employment.

For example, the Southern and Northern regions have an unduly high share of low productivity occupations with an above average rate of outward migration. The plan also indicates the predominance of traditional agriculture in the economic life of the Northern and Southern regions (Third Plan, pp59-61).

The fourth development plan further highlighted the regional disparities caused not only by natural imbalances but also by the pace of development, by the pattern of rural-urban migration flows, and by cost considerations. The provision of services such as education, health, municipal facilities and telecommunications are continuously being improved, a process which itself has generated imbalances in the relative level of service provision. In general, the Central and Western regions, which include the largest urban centres, are considered the most diversified regions and they also have the highest level of service provision (Fourth Plan, p240).

It is interesting to note some particular factors that appear in the regional differences in order to understand the wide disparities between developed and underdeveloped regions. Table 3.2 summarizes the variation among the regions in their populations and settlements. According to the 1974 census, the population of Saudi Arabia was 7,012,642 inhabitants. Thirty-nine per cent of the population were urban, living in cities of more than 30,000 inhabitants, 34.2 per cent were rural, and 26.8 per cent were nomads. The Western region was the most populated, with 32.4 per cent of the total population, followed by the Central region with 22.6 per cent. The Southern region came third with 20 per cent, whilst the Northern and Eastern regions were less

Table 3.2 Regional Distribution of Population in 1974

Region	Population	%	Urban %	Rural %	Nomad %	Area in Sq. km	%	Population Density
Western	2,273,402	32.4	58	21	21.0	409,120	12.8	3.6
Central	1,588,915	22.6	46	28.4	25.6	487,480	18.9	3.3
Southern	1,418,342	20	11	64.7	24.3	150,000	11.3	9.4
Northern	889,332	12.8	13	22.7	64.3	430,000	20.8	2.0
Eastern	769,648	11	43	46.7	10.3	763,400*	36.1	1.0
Total	6,939,642	99	39	34.2	26.8	2,240,000	100	3.1

Source: Compiled from 1974 Population Census

Note: The total population figure does not include 73,000 persons living abroad constituting 1 per cent.

* The Eastern region includes the empty quarter desert area.

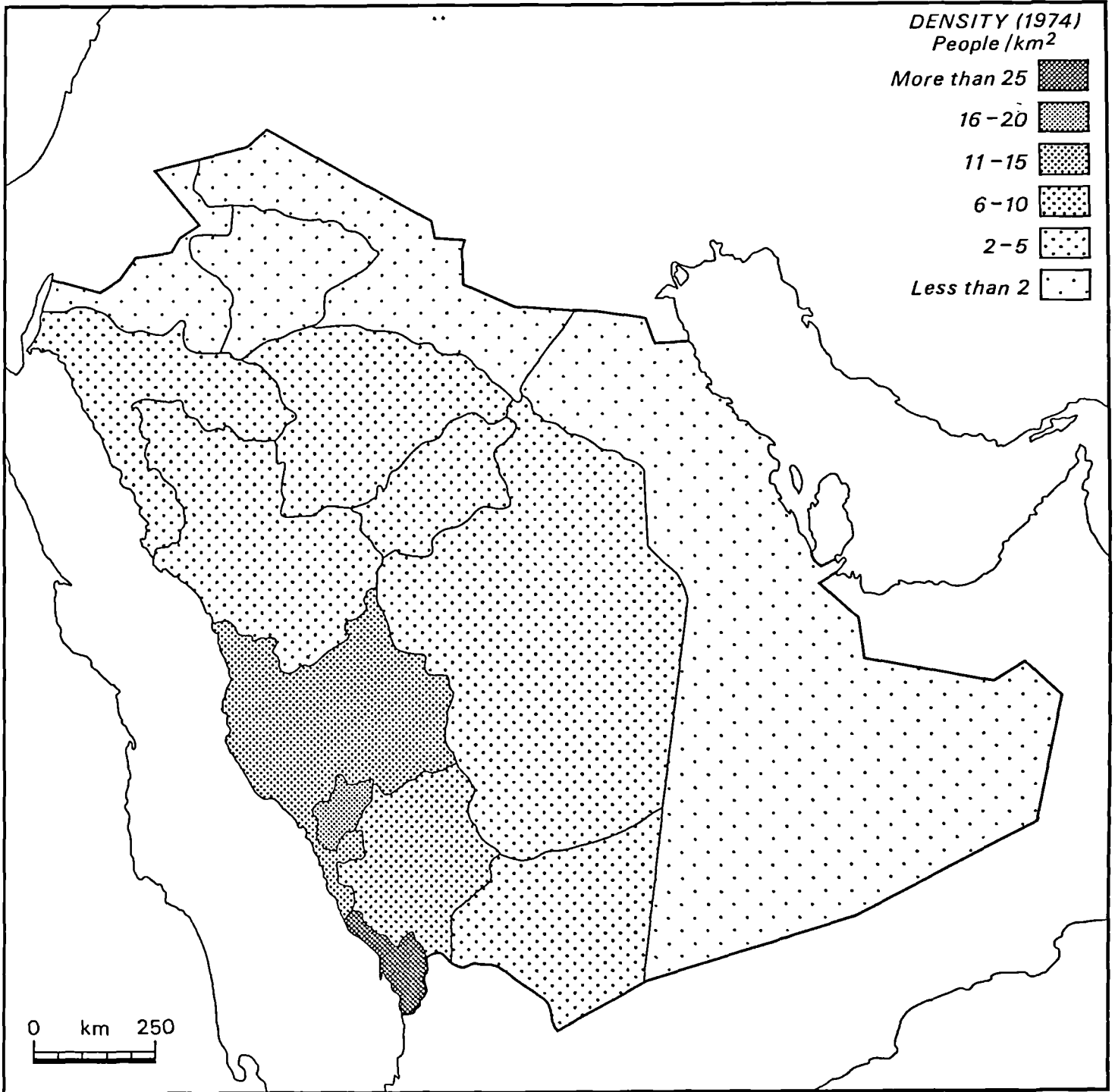


Fig.3.3 Population Density in Saudi Arabia in 1974

Source: Atlas of population;1981

populated with 12.8 and 11 per cent respectively. In terms of density, the table shows that the Southern region was the most densely populated region in the country with an average density of 9.4 persons per sq.km. The highest density in the region belonged to Jizan province, where the figure reached over 28 persons per sq.km (see Fig. 3.3).

In the level of urbanization, the Western region predominated with the highest level of 58 per cent. The remaining figures were 46 per cent in the Central, 43 per cent in the Eastern, 11 per cent in the Southern, and 13 per cent in the Northern region.

It is clear that the Western, Central, and Eastern regions are not only dominated by the major cities, but also contain smaller cities, as is shown in Table 3.3 and Fig. 3.4. The increase in the urbanization level in the middle belt regions can be attributed to certain fundamental factors. In the Western region, the factor of religion has played an important role in the growth of Makkah and Medina as holy cities, with Jeddah serving as a busy port and airport both for commercial purposes and for pilgrims. Taif also serves as a resort for government officers during the summer. In the central regions, the administrative factor has played a major role in the growth of urbanization, particularly in the capital Riyadh where the ministries and embassies are located. The growth of urbanization in the Eastern region is due to the oil industry which has been responsible for the growth of Eastern cities such as Dammam, Al Khubar, Dharan, and Al Jubail. Moreover, these regions have also dominated the social and economic activities so that the urbanization level (86.2 per cent of the urban population) shows a concentration in these

regions.

Table 3.3 Regional Distribution of Urban Centres according to Population Size, 1974

Region	Centres over 100,000	Centres 50,000 to 100,000	Centres 20,000 to 50,000	Centres 5,000 to 20,000	Total	Total of Urban Pop.	%
Western	4	-	-	5	10	1,367,576	43.3
Central	1	1	2	10	13	863,918	27.4
Eastern	2	1	3	8	14	489,095	15.5
Southern	-	-	4	8	12	228,241	7.2
Northern	-	1	2	7	10	209,019	6.6
Total	7	3	11	38	59	3,157,849	100.00

Source: Compiled from Atlas of Population, King Saud University 1981

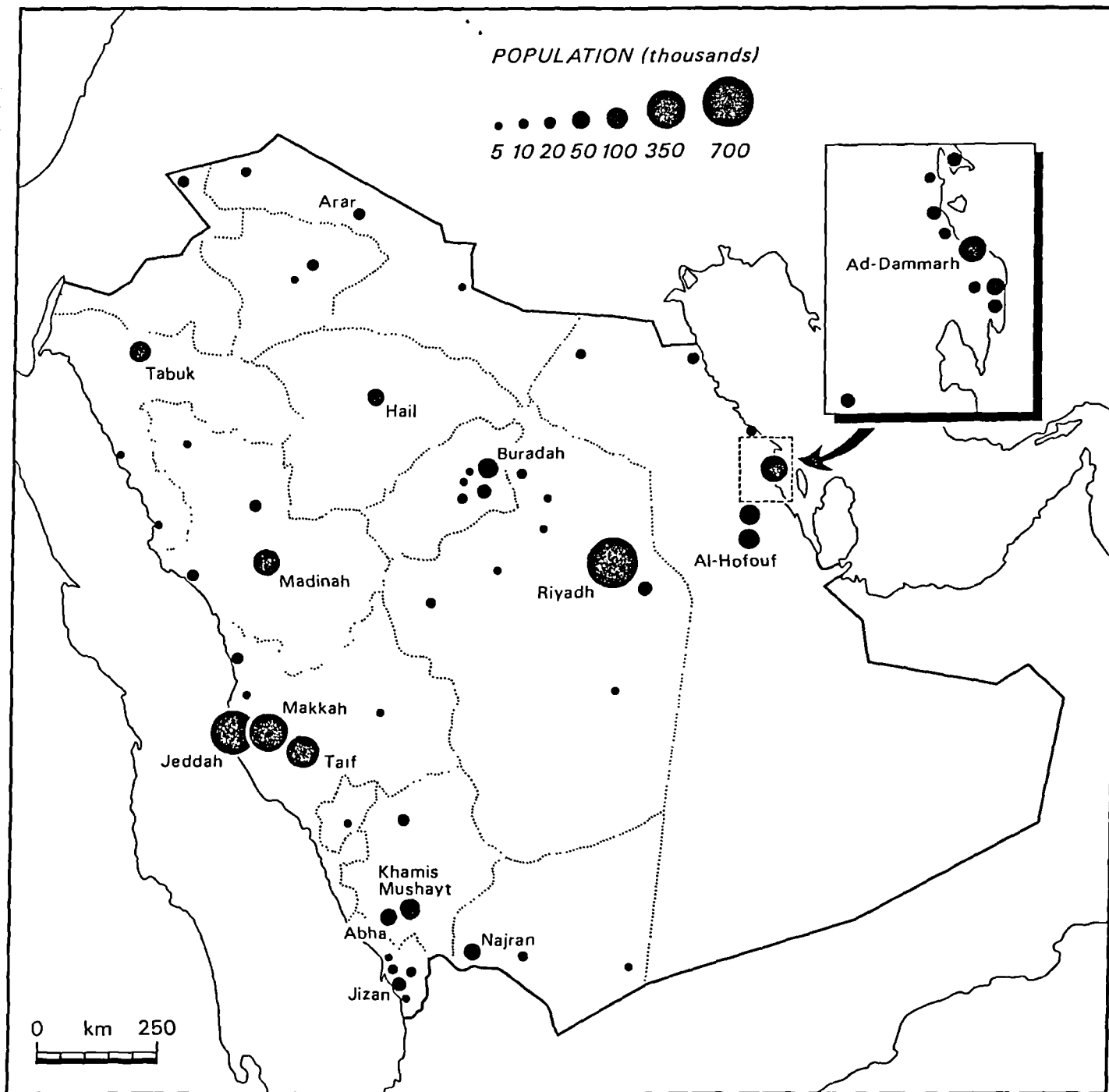


Fig.3.4 Distribution of Urban Centres in Saudi Arabia in 1974

Source: Atlas of population;1981

In contrast, the Southern and Northern regions have much lower levels of urbanization (13.8 per cent of the total urban population in the country). Moreover, their urban centres are also few in number and smaller in size in comparison with other regions. This indeed reflects the predominance of large urban centres in the core region with a high concentration of the social and economic activities reflecting regional and urban imbalances, which have motivated the remote population to migrate from rural and underdeveloped regions to developed regions in search of higher incomes and better living standards.

Actually, there is no reliable information about inter-regional migration. However, as in many other developing countries, there is a stream of migration from rural to large urban centres, so that in larger cities of the core regions, their populations have increased from 20 per cent in 1970 to 42 per cent in 1980 (see table 3.4), whilst the rural areas have declined from 60 per cent in 1970 to 46 per cent in 1980, reflecting the rapid level of urbanization and the change from agricultural and agrarian service occupations to new occupations in urban services. The result is that agricultural employment is estimated to have declined by 2.9 per cent between 1975 and 1980 as many farmers found better paid work in other parts of the country. Areas where the economy is predominately based on agriculture are likely to be less able to support a thriving tertiary sector. Table (5-3) shows that the Western, Central and Eastern regions are the more developed regions; their labour force in primary activities was below the national average, whilst their share of tertiary activities was above the average.

Table 3.4 Distribution of Total Population from 1970-80

	1970	1975	1980	
% of population in large cities (more than 100,000 inhabitants)		20	35	42
% of population in small towns		20	16	12
% of population in rural areas		60	49	46

Source: Third Development Plan, p56

On the other hand, the Southern and Northern regions are rural areas which have most of the primary activities (over 60 per cent) relating to agricultural and livestock production, which indicates that the agricultural sector is the slowest growing and the least productive of employments.

Table 3.5 Regional Distribution of Labour Force (1978) by Percentage

Region	Primary	Secondary	Tertiary	Not identified
Western	32	17	47	4
Central	31	14	49	5
Eastern	21	35	41	3
Southern	66	9	23	2
Northern	63	6	27	4
Total	40	16	40	3

Source: A Al-Ibrahim, 1982

Table 3.6 Regional Distribution of Establishments and Employment 1980

Region	No. of Establishments	%	No of Workers	%
Central	41,329	28.6	305,827	30.7
Western	57,822	40.0	326,735	32.8
Eastern	24,164	16.7	302,533	30.4
Southern	12,185	8.4	33,700	3.4
Northern	8,936	6.2	26,336	2.6
Total	144,436	100.0	995,131	100.0

Source: The Statistical Indicator (1987)

Another observation relates to the distribution of business establishments. Table 3.6 shows that 28.6 per cent of the total establishments, providing 30.7 per cent of the total employment, were located in the Central region; 40 per cent, providing 32.8 per cent of employment, were in the Western region; and 16.7 per cent, providing 30.4 per cent of employment, were in the Eastern region. That means that 85.3 per cent of establishments, providing 93.9 per cent of employment, were dominated by the middle belt regions. The Southern and Northern regions showed only a slight share of establishments and employment.

Moreover, the disparity of industrial structure by regions can be seen in an examination of the state of distribution of industrial establishments and by the loans distributed by the Saudi Industrial Development Fund (SIDF). Undoubtedly, there has been a concentration of industries in the Western, Central, and Eastern regions, particularly in Jeddah, Riyadh, and Damman cities. Table 3.7

summarizes the industrial structure in the country. By 1987, the Central region had 37.7 per cent of the total licensed firms, with 33.3 per cent of the total workers; the Western region accounted for 31 per cent, with 33.4 per cent of workers; and the Eastern region had 23 per cent of the total firms, with 29 per cent of the total workers. Not surprisingly, the Southern and Northern regions contributed a very small proportion of the total firms and workers.

Moreover, the table shows the location of industrial estates, 40.4 per cent being located in the central region, 28.5 per cent in the Western region and 31.1 per cent in the eastern region, whilst the Southern and Northern regions have no industrial estates.

Confirmation of this regional pattern of industrial locations is also given by an analysis of the distribution of regional industrial finance granted by the SIDF. Between 1974 and 1987, the Central, Western, and Eastern regions received 94.5 per cent of the total amount of the credit. In contrast, the Southern and Northern regions received a negligible amount and a significantly lower share. Moreover, the middle belt regions, more specifically a few urban centres, have the largest number of hospitals, universities, secondary schools, post offices, commercial banks, municipalities and sanitation services, while in the agricultural regions these services tend to be either spatially uneven or unavailable.

Therefore, the impact of development on the region is more obvious in population migration. The Southern and Northern, which have remained undeveloped and traditional agricultural regions, have had a

Table 3.7 Regional Distribution of Industrial Firms, Estates, and Loans, 1987

Region	No of* Firms	%	No of* Workers	%	Present** area (hect)	%	Total of*** loans (millions SR)	%
Central	777	37.7	46,858	33.3	1,360	40.4	4,910	32.5
Western	642	31.1	46,948	33.4	959	28.5	4,931	32.7
Eastern	474	23	40,851	29	1,045	31.1	4,429	29.3
Southern	108	5.2	4,498	3.2	-	-	672	4.4
Northern	60	3	1,465	1.0	-	-	-	-
Total	2061	100	140,620	100	3,364	100	15,099	100

Sources: * The Statistical Indicator, 1987

** Saudi Arabian Monetary Agency (SAMA), 1987

***Saudi Industrial Development Fund (SIDF), 1987

part of their population drained off by the other regions. The high prosperity of the middle belt regions brings with it an outward migration from rural areas attracted by higher salaries in non-agricultural employment. The phenomenon has been asserted by Al Ibrahim (1982, p219) when he wrote, "In the south-west and north regions per capita income is significantly lower than in the other regions. For example, in the western region the ratio per capita income to that of the south-west and north is 5:1 and 3:1 respectively." Presley (1984, p133) also noted that "the south-west is unlikely to see a Saudi population growth of more than 3 per cent per annum in future years; the same is also true of the northern region, while the central region may anticipate a growth rate of 3.7 per cent per annum or more."

In fact, the above general picture of disparities among the regions induces the planners in the country to more consciously adopt a strategy of regional planning in order to reduce the already established polarization tendencies of development that favour the urban areas. But the question is whether the existing regional development policy is quite enough to distribute the social and economic services to the centres at the bottom of the settlement hierarchy in the remote rural areas. The following analysis is concerned with that policy in the country.

3.4 Regional Development Strategy

In Saudi Arabia, since the beginning of 1970, the government has launched four five-year development plans. The main objectives of

these plans are:

1. Using the national resources to maintain a high rate of economic growth and to reduce the country's dependence on a single depletable asset (oil resources).
2. Developing human resources by meeting the education and health services at all levels.
3. Social services are important, so the government intends to expand and intensify its programmes in many regions in order to provide the development benefits to the population in the whole of the country.

Because of the high levels of polarization and disparity in the spatial structure of economic and social conditions between regions on the one hand and between urban and rural areas on the other, regional development policy has become one of the principal concerns of planners and strategists in the country. As a result, the third and fourth development plans have been more integrated and detailed, and through a regional strategy have concentrated on a number of important factors. These factors have taken into account the importance of diversifying the socio-economic and development investment projects in each region. Indeed, the third plan introduced a more explicit and co-ordinated approach to dealing with the regional dimension of national planning. The objective was to create a relative equilibrium between urban and rural areas. It also aimed at finding the proper social structure and the facilities that could improve individuals' productivity. Moreover,

the particular objectives were to avoid over-concentration of resources in a few urban enclaves, and also to stimulate the provision of development facilities in selected areas that will support productive enterprises. (Third Plan, p108)

In this respect, the regional strategy has been formed within the general strategy. The system of this strategy has been introduced at the three levels of urban settlement hierarchy, (national, regional, and district centres), spread throughout the kingdom. This system has also been asserted by the fourth development plan as a vital strategy for regional development.

3.5 The Role of the Development Centres

The organizational framework of development centres operates in terms of the following functions:

- National development centres, fulfilling various economic and administrative functions for the whole country, providing very specialized services and growth poles of national significance.
- Regional development centres, constituting the locations of various specialized economic, welfare, and administrative institutions, which can reasonably be shared by a number of districts.
- District development centres, constituting the locations of institutions and services needed frequently but not daily by a

given population which is termed a district, "which can be delineated according to both accessibility to the particular services and the capacity of services." (Third Plan, p109)

Table 3.8 and Fig. 3.5 show the regional distribution of development service centres in the country. The three tiers in the model of regional development have become identified into eight national centres (which act as first order level in the settlement hierarchy), the second level of 16 regional centres, finally the 53 district centres conceived as a third level in the model of regional development.

It is clear that the national ratio between villages and service centres is very high (134 villages per centre) compared with the ratio in developed countries, where, for example, the ratio is 1 town to every 72 villages in Austria. (Johnson, 1976, p174) This in fact reflects the low level of central places in developing countries in general and Saudi Arabia in particular, albeit such centres are very important for rural development.

Regarding the regional level, the table also indicates that the Eastern, Central, and Northern regions have very low ratios whilst the Western and Southern regions have very high ratios well above the national level, particularly the Southern region where there is 1 town to every 230 villages.

Table 3.8 Regional Distribution of Development Service Centres

Region	No of Villages	National Centres	Regional Centres	District Centres	Total	Ratio
Western	3086	3	2	11	16	193
Central	1178	1	1	14	16	74
Eastern	1911	2	3	5	10	19
Southern	5299	2	7	14	23	230
Northern	611	-	3	9	12	51
Total	10363	8	16	53	77	134

Source: Compiled from Third Development Plan, Figure 3.5 and Village Survey in the Kingdom, 1984



Fig.3.5 Distribution of Development Urban Centres in Saudi Arabia

Source: Third Development Plan 1975-1980

3.6 Conclusions

Regional strategy is intended to narrow the gap between rural areas and what occurs in urban centres as a problem of the new transition in the national economy. The core-periphery relation has created many problems in the spatial disequilibrium by concentrating most of the development activities in a few centres rather than extending them across all the national regions.

Unfortunately, the regional development strategies that have concerned a few selected urban centres are not adequate to solve the social and economic problems of the rural areas, nor can they realize the commitment of the development plans to bringing the development programme to remote rural areas. The strategies have concentrated on the rapidly growing centres, either national or regional, whilst small towns, which are the places of success of rural development, have been neglected.

Regional development requires the setting of municipal and agricultural improvement services within easy geographical access of places where the majority of the rural population are found. In the case of Jizan province, with its high proportion of rural population and villages, special attention should be given to the role of small towns, in order to affect the capacity for economic growth, the efficiency of production activities, the distribution of income and the level of spatial settlement integration.

CHAPTER 4

Jizan Province: General Background Aspects

4.1 Introduction

Jizan province is one of the southern provinces of the Southern region of Saudi Arabia. Agriculture is the most prosperous sector of the province's economy, and this prosperity is the direct consequence of geographical characteristics of the area as well as the people's endeavour and ingenuity. Recently, the traditional agricultural sector has been ignored, when the prosperity of the oil sector and its related activities began to grow in the country since 1975. The outstanding feature of the province during the past twenty years is the strong migratory movement induced by differential wage levels in the various development modes of the country. Moreover, the province witnessed both overall migration towards its cities and towards urban centres located outside the province, particularly to middle belt centres. This migratory flow has a strong effect on the agricultural labour force, and agricultural production as well. The purpose of this chapter is to bring into focus certain aspects of the province, ie. the physical aspects, administrative structure, market system, population growth and movements, and labour force occupations.

4.2 Physical and Environmental Aspects

It is essential to give a brief analysis concerning physical and environmental aspects of Jizan province, because physical factors have an important impact directly and indirectly on the main economic

activity, agriculture, as well as on the population and settlement distribution in the province.

4.2.1 Provincial Setting

Fig. 4.1 shows the province bounded by the Red Sea on the west, the Republic of Yemen on the south and east, the province of Asir on the north and north-east, and the province of Makkah Al Mukkarrama on the north-west.

The province is administratively divided into 36 local emirates in subdistricts, as shown on Fig. 4.2, each having the name of its major town. Jizan city is the main town and the capital of the province. It is the main port on the Red Sea and the airport of Jizan province is approximately 550 km south of Jeddah and roughly 950 km south-west of Riyadh, the capital of the country. However, the nearest major cities in the Southern region are Abha, Khamis Mushayt, and Najran.

Geographically, the province is somewhat isolated from the national growth poles that are the main urban centres and industrial areas where economic development began at an earlier stage. The province would seem to have been a backward area as a result of its great distance from developed regions and resultant exclusion from large development projects.

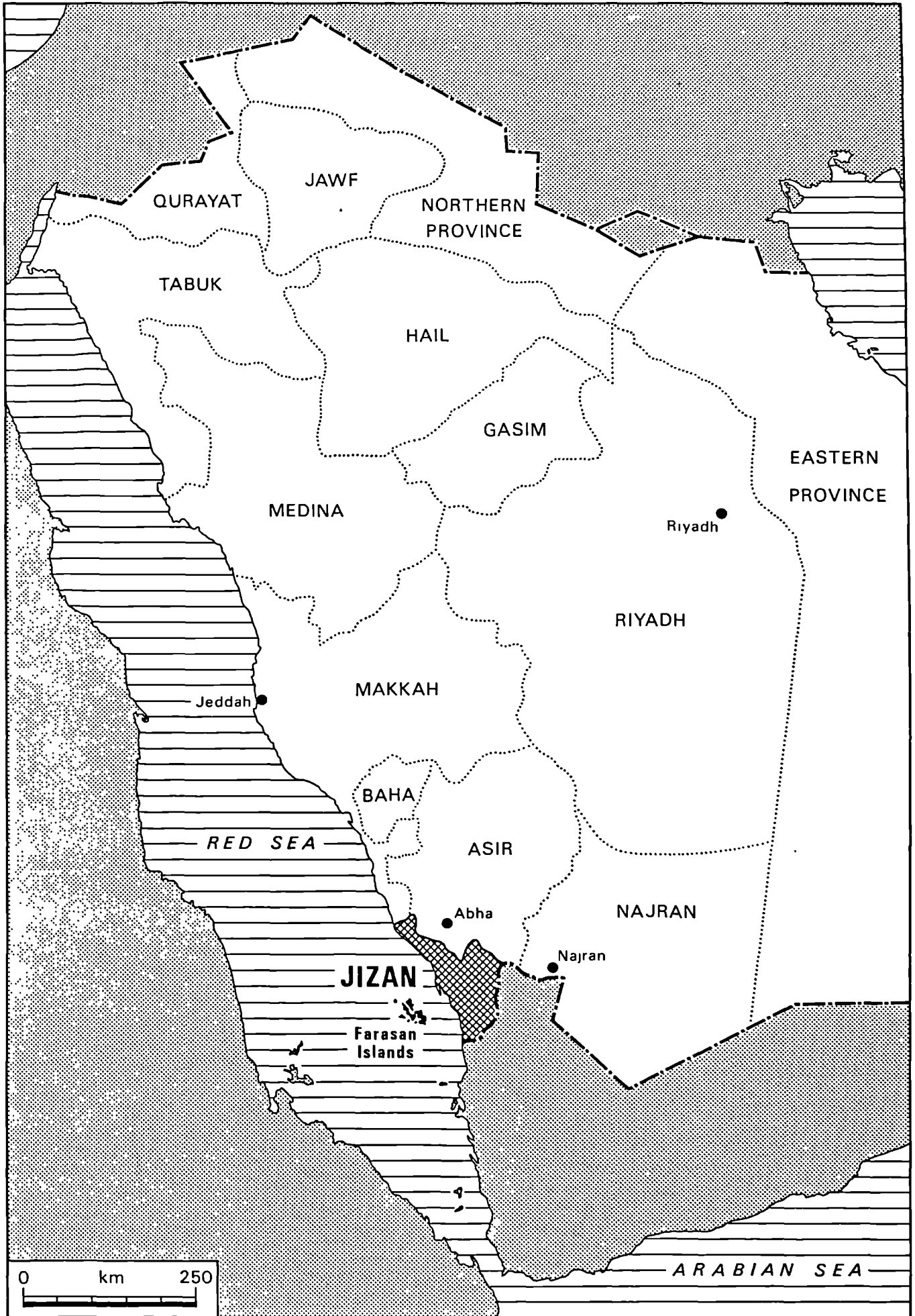
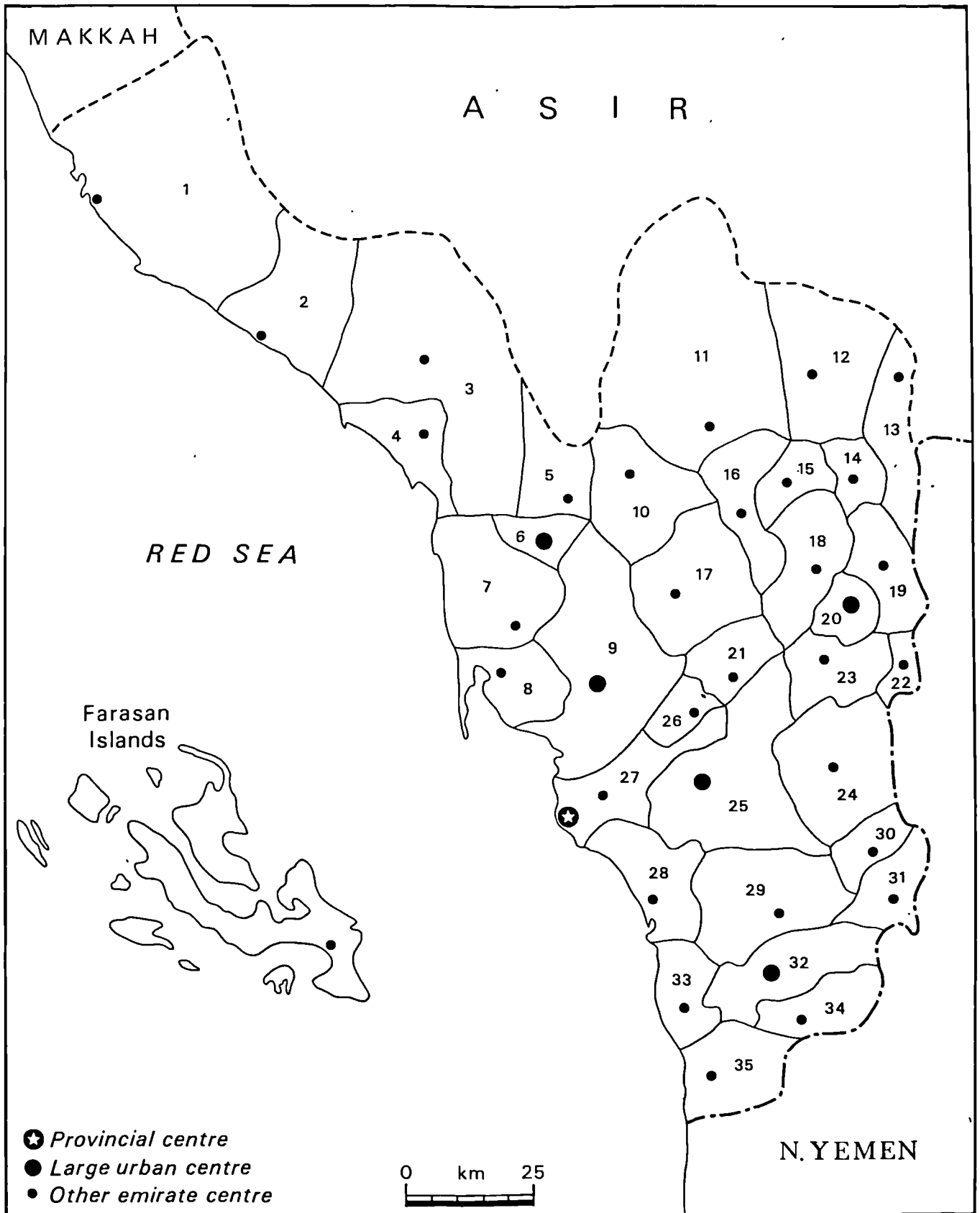


Fig.4.1 Location of Jizan Province in Saudi Arabia



- | | | | |
|----------------|---------------|-----------------|----------------|
| 1. Al Qahmah | 10. Al Haqu | 19. Ad Dyer | 28. Al Madhaya |
| 2. Ash Shuqaiq | 11. Ar Raith | 20. Fayfa | 29. Al Ahad |
| 3. Ad Darb | 12. Al Hashr | 21. As Shuqairi | 30. As Salb |
| 4. Itwad | 13. Ar Rabuah | 22. Qais | 31. Al Khawbah |
| 5. Misliyah | 14. Al Zaydan | 23. Al Humirah | 32. Sametah |
| 6. Baish | 15. Munjid | 24. Al Aridah | 33. Dihamah |
| 7. Al Aliyah | 16. Harub | 25. Abu Arish | 34. Al Tuwal |
| 8. Al Qoz | 17. Al Kudmi | 26. Dhamad | 35. Al Mussam |
| 9. Sabya | 18. Iban | 27. Wadi Jizan | 36. Farasan |

Fig.4.2 Distribution of Sub-Emirates of Jizan Province

4.2.2 Physiographic Units

Figure 4.3 shows that the province, geographically, is divided into three physiographical units, resulting from the geological origins of the rift valley. These are:

- * the coastal plain from the sea-shore to 100 m above sea level;
- * the hilly area, from 100 to 900 m above sea level;
- * the mountainous area, which ranges from 900 m to the edge of the escarpment at more than 1800 m above sea level.

The great differences in elevation from the sea-shore to more than 1800 m above sea level result in strong contrasts in climate, soil and vegetation, which in fact influence certain geographical characteristics, particularly in the terms of population distribution, agricultural resources, settlement types, and concentration as well as potential for development. The following is a brief description of the physiographical units:

The Coastal Plain

The plain stretches 225 km from Al Qahmah in the north of the province to Al Mussam in the south. It covers approximately 800 sq km or 47 per cent of the province, and on its eastern edge the level of the plain is about 100 m above sea level.

The plain had gradually begun to form at the edge of the mountain slopes under the effect of sedimentarious factors through valleys

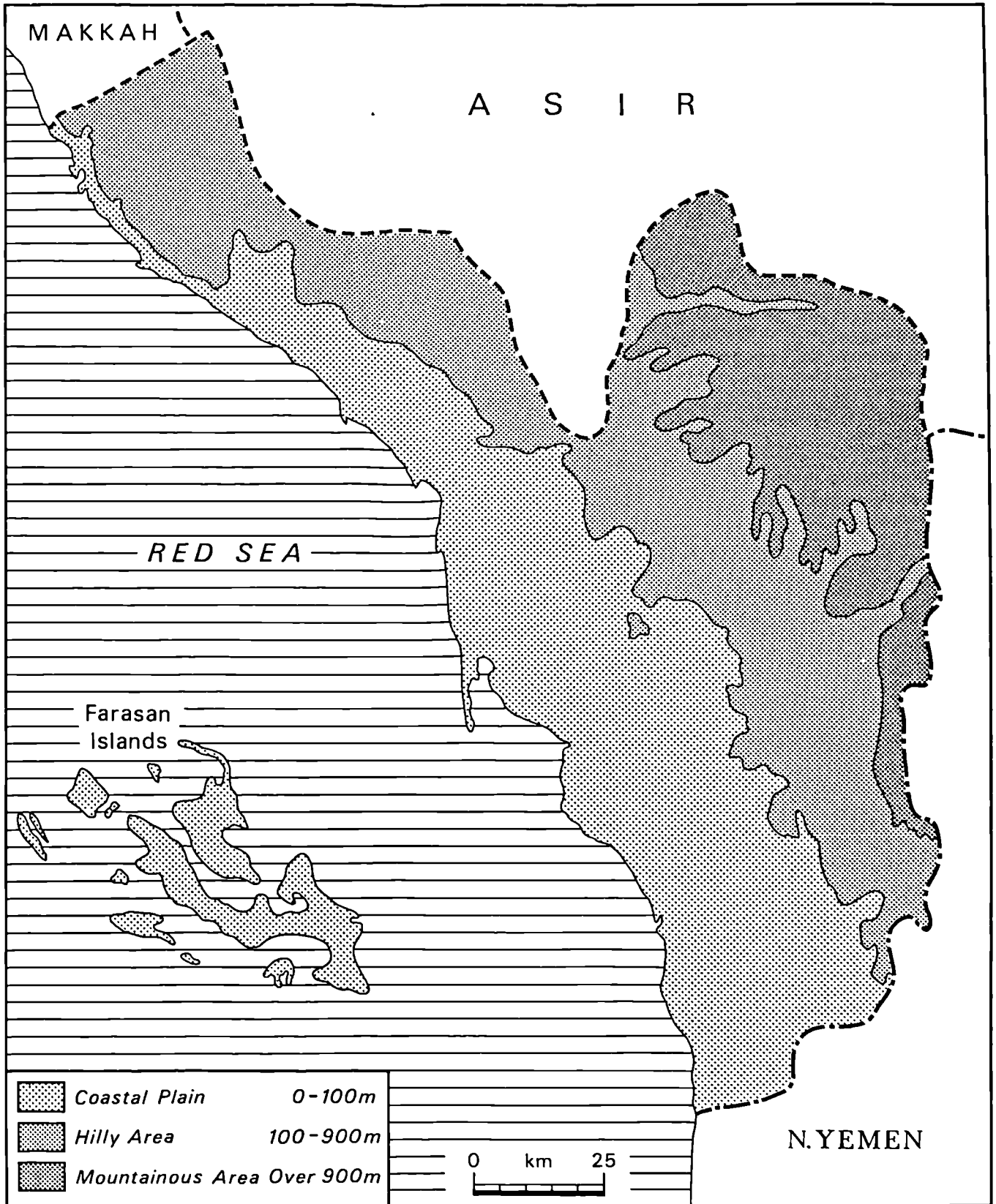


Fig.4.3. Topographical Units of Jizan Province:

Source: Sogreah, 1983

leading to the Red Sea. Apart from local topographical phenomena, the area can be described as sloping gently towards the sea at a gradient ranging from 0.4 per cent at the mountain foot to 0.1 per cent at the salt swamps near the coast.

A great number of valleys stretching down from the mountains to the sea, cross the plain from east to west, marked every 10 to 20 km by major valleys. The main ones from north to south are Baish valley, Sabya, Dhamad, Jizan, Khums, Khulab, Liyah, and Tashar (see Fig. 4.4).

Flooding has been traditionally used for irrigation of crops in the valleys along which most rural settlements are to be found on alluvial deposits transported by flood water from adjacent basaltic mountains. These have good development potential where water is available. Each valley can be split up into three tracts. In the central tract, the valley spreads out a great distance over the plain and this is where larger earth bands have been constructed and where productive arable farming is practised with stock rearing. Further upstream the valley is too narrowly confined between the hills to allow such extensive crop growing and here the rearing of sheep and goats predominates. Downstream of the main flood spreading zone, only very intense flood flows manage to cover the land. Sandy land forms here and the soil is saltier (sabkha), thus making it suitable for stock rearing and dromedaries (see Fig.4.5).

In the areas of the valley subject to flooding, farming was an important source of subsistence; thus each tribe did its best to control at least one valley. As regards the central tract, within the

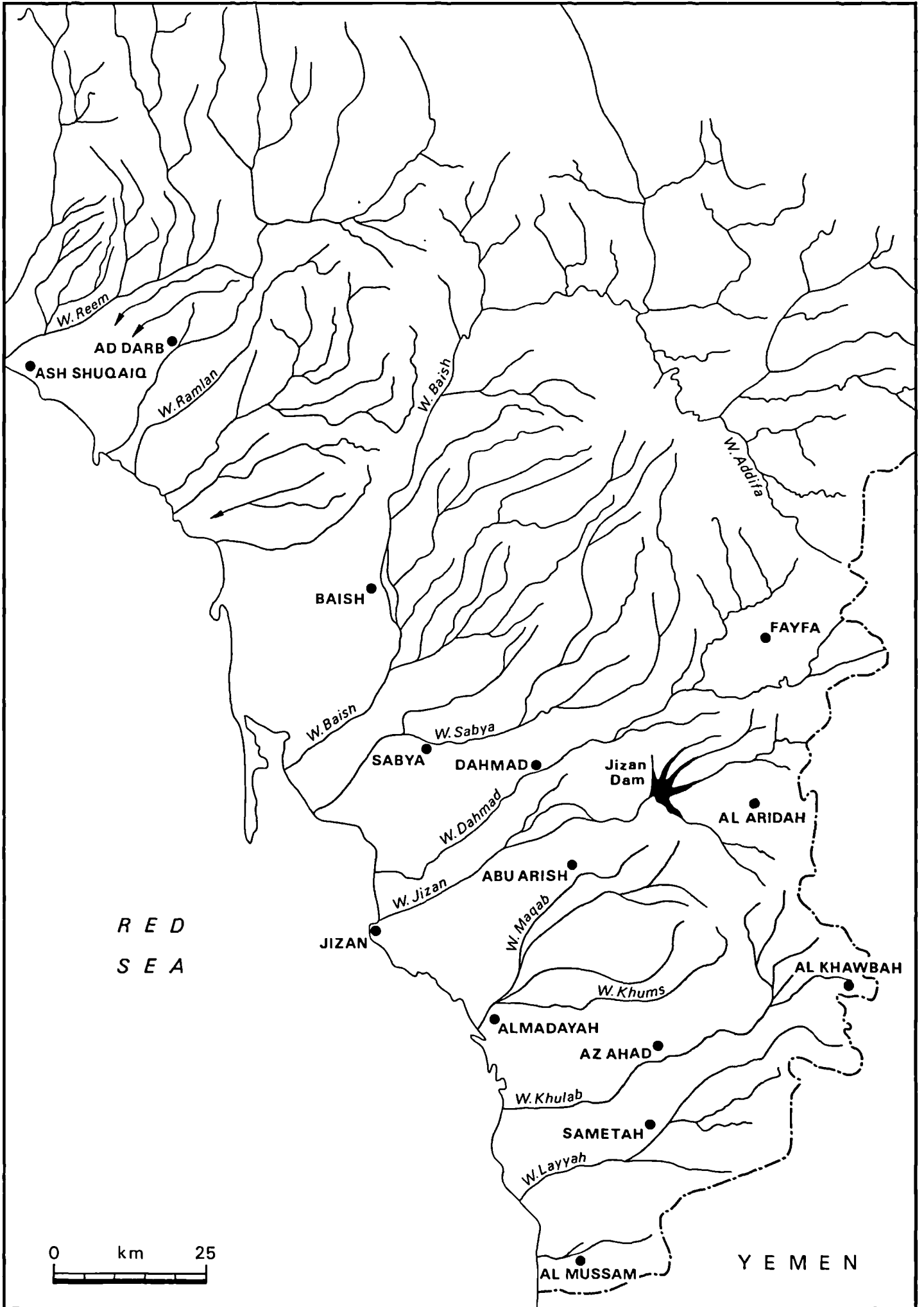
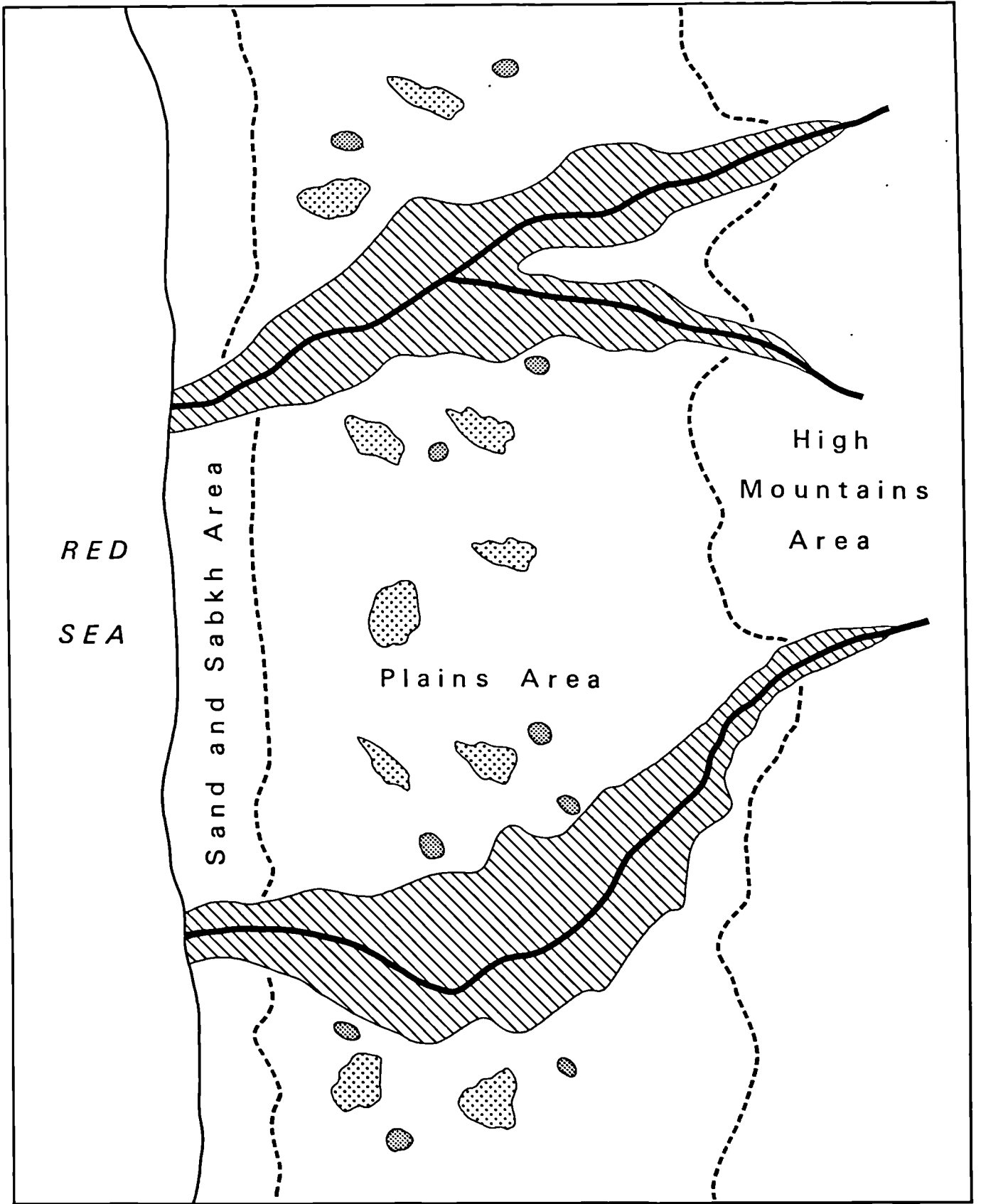


Fig.4.4 Drainage System in Jizan Province

tribe, the most favoured members were those who controlled the upstream part of the valley course, as this was the only section to benefit from low flood flows (see Fig.4.6). People were grouped into large villages built on the valley banks, and its valley has its chain of villages peopled by farmers and pastoralists. These villages had close social and economic interrelations. Between the valleys there are the lands of Al Khabt, *which used for millet cultivation and* stock-rearing. Recently, pump irrigation has developed in this plain, particularly around urban centres (see fig.4.5).

The Hilly or Foothill Area

This area covers about 37 per cent of the province and is 25 km wide. It is a steeply sloping hilly terrain interspersed with numerous valleys, many of which run along fault lines in a north-east to south-westerly direction. In general, the valleys are rather narrow and erosion exceeds deposition. In some places, however, the valleys have widened and alluvial deposition has been devoted to agriculture. Whenever possible, terraces have been made along the valleys. These terraces are irrigated by simple diversion works. Riverine erosion necessitates protection of the land. The hilly terrain is covered by shallow skeletal soils, but for centuries man has terraced the area between the hills and the footslopes where possible. The agricultural area in this part consists of many small patches and a number of larger areas, particularly in the emirates of Al Aridah and Al Khawbah. This area is characterized by considerable communication difficulties, especially during the rainy season when floods can easily isolate entire masses.



LOWER PART OF WADI

MIDDLE PART OF WADI

UPPER PART OF WADI



Flood irrigated area



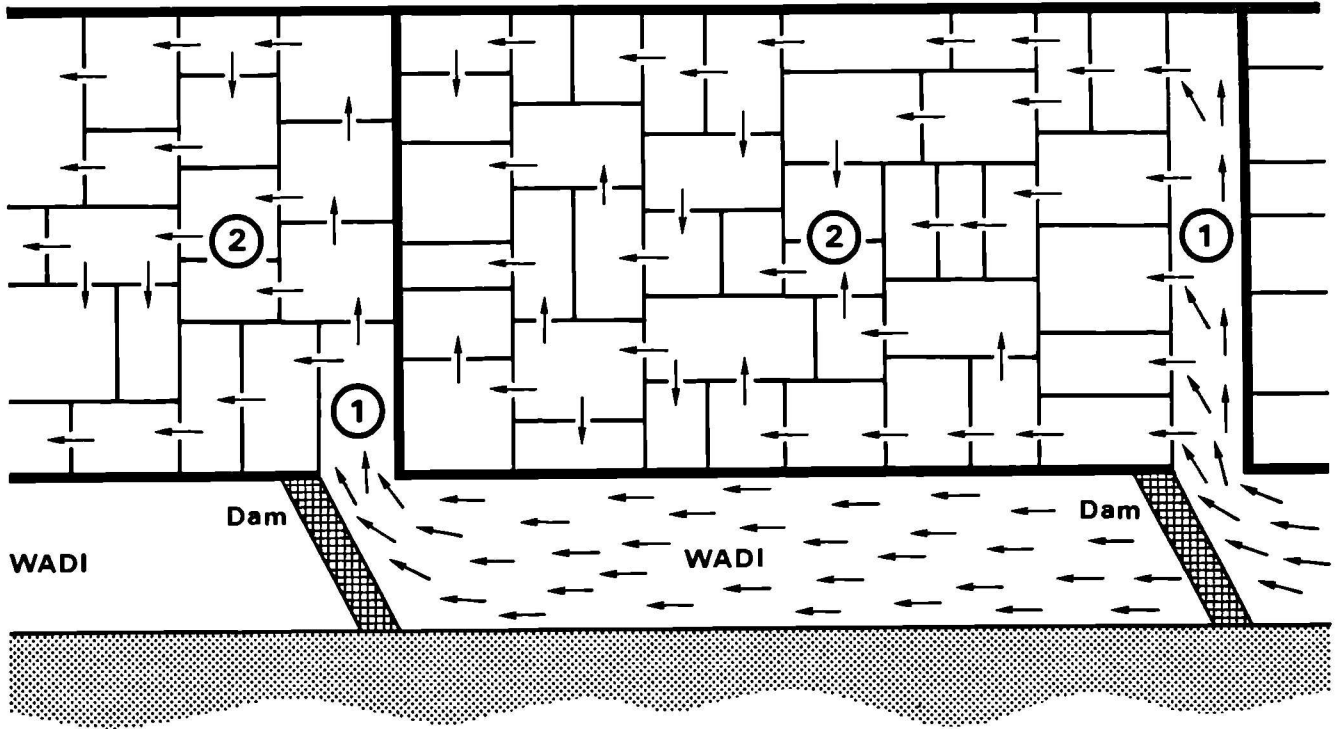
Rain-fed irrigated area



Well irrigated area

Fig.4.5

Main parts of Wadi in South Tihama



① Main channel ② Agricultural plot



Fig.4.6 Flood Irrigation System in Jizan Province

The Mountainous Area

This area covers about 16 per cent of the province. The landscape here is rugged with many variously shaped valleys. Serious erosion is responsible for the fact that soils in this area are skeletal. As the rainfall generally favours rain-fed agriculture, especially in the higher areas, the local population has constructed terraces in many small, scattered areas with less steep slopes, or they have built flat steps in the hillsides. The difficulties associated with mountainside agriculture, combined with the possibility of finding easier jobs in the urban areas, have led to the gradual abandonment of cultivated terraces. For example, more than one third of terraces around the villages in the Ad Dyer and Harub emirates have been abandoned (Sogreah, 1983).

4.2.3 Soil

The soils of Jizan province have been discussed extensively by Howard Ferris (1953) who divided the soil into four main groups, each representing one of the prevalent types of soil. Those are the wadi, khabt (between wadis), hazem (slopes) and sabkha groups (see Fig. 4.7).

I. The Wadi Group

This group consist of alluvial soils which are laid down by flood deposition. The soils are found in all of the major wadis where sufficient run-off has caused the movement of alluvium from the high lands and its subsequent deposition through flood plain action. The soils are deep, of medium to fairly fine texture, and of good

structure. Moreover, they have external drainage and they are also free from accumulation of harmful salts (Ferris, 1953). In fact, these lands are the most fertile areas, of the highest quality for irrigation farming, being capable of producing a wide variety of crops. Recently, most of the lands are cultivated for sorghum and coupled with rapidly growing population, leading to a concentration of settlements with high density of population along the wadi banks.

II. The Steppe Group (Khabt)

These soils are associated with land between the wadis that are not reached by run-off water. This group occupies a vast area in Jizan province. Its topography varies between level and slope. The upper stratum of the soil is to a large extent the product of the wind and it varies considerably from areas with a few sand hills to vast areas of dunes. Drainage is internal and fast as it has been noticed that after rain, the water is absorbed by the soil in a very short time.

The structure of the sector varies between light and moderate with gradation from one stratum to another. Calcium carbonates are also found in the lower strata. Large quantities of calcium are found in the northern part, more in fact than in the southern parts, which indicates a decrease in rainfall as we move further north (Ferris, 1953). Millet is cultivated in small areas around rural settlements, but most of this land has never been cultivated and is used for grazing.

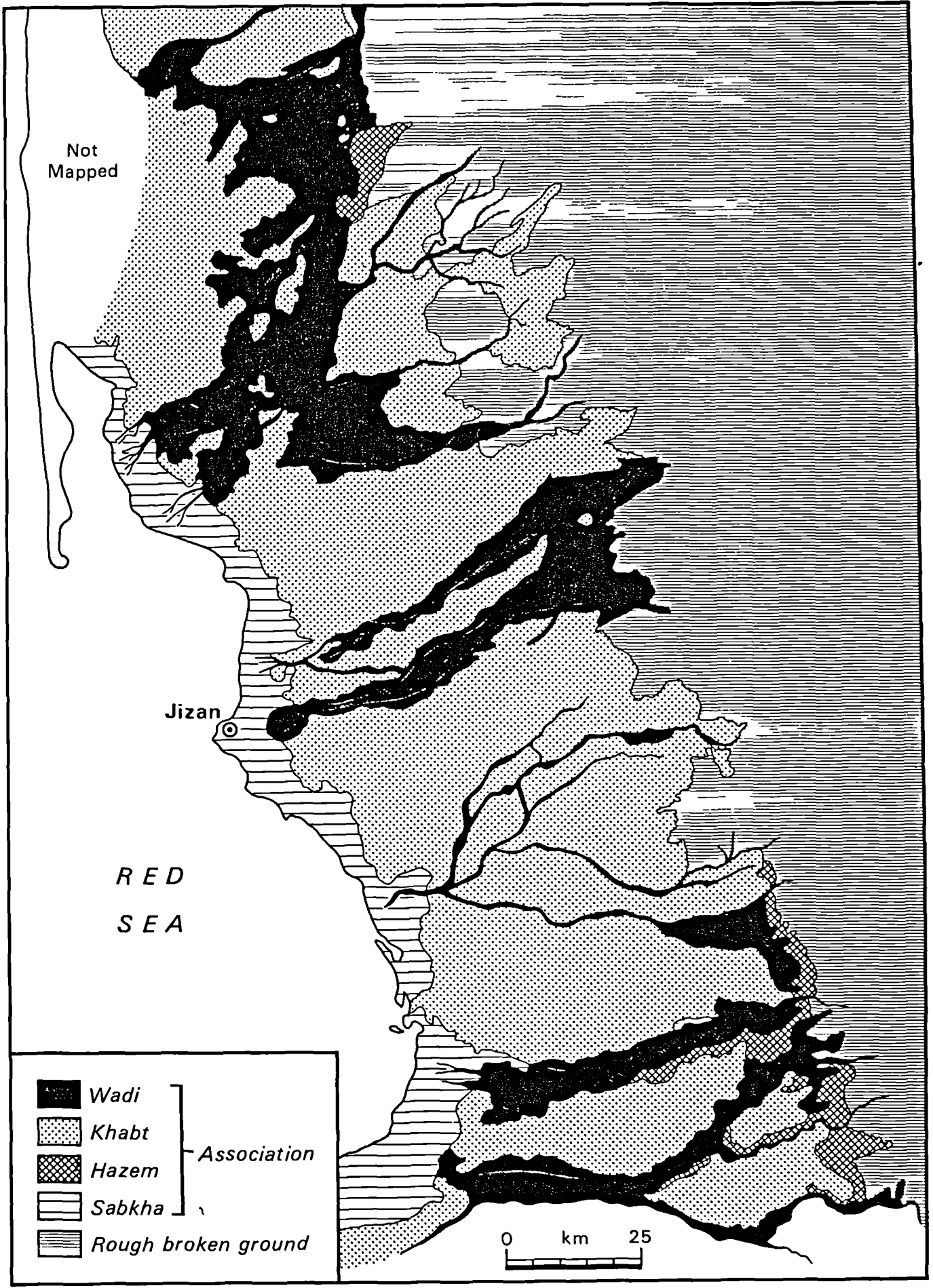


Fig.4.7 Soil Classification in South Tihama

Source: H Ferris, 1953

III. The Slopes (Hazem)

These lands represent the group formed of stone alluvium that had been washed from the heights of the mountains. They run parallel to the mountains and may reach the sandy plains or terminate at the valleys. Normally the surface appears to be cracked because of the small and few drainage courses that contain areas covered with stones. Drainage is by and large done externally, though it may also be done internally, especially after heavy rain. Vegetation seems to be rare in this area, except for narrow strips stretching along the valleys. This type of soil is less useful for agriculture than the previous ones.

VI. The Sabkha

The sabkha occupies the strip of saline land which stretches along the Red Sea coast. It varies in width from narrow strips to areas that are 4 km wide. This soil has poor drainage whether internal or external.

4.2.4 Rainfall

The south-west region of the kingdom is exposed to the monsoon and Sudan depression. Therefore, most of the rain that affects the area falls in summer from June to September when about two thirds of the annual rainfall occurs. The maximum monthly rainfall invariably occurs in one of the two months of July and August and results in rapid run-off.

In fact, the rainfall pattern is irregular in the plain but more constant in the highlands. In the coastal plain area the annual average rainfall is less than 50 mm, such as is the case with Jizan town. Gradually, the rainfall increases according to distance from the coastal areas. In Abu Arish town, 30 km east of Jizan centre the annual average of rainfall increases to 151 mm. Moreover, in the hilly area, as for example in the case of Al Aridah 27 km east of Abu Arish, the annual average of rainfall also increases to 500 mm, and finally in the high mountains, for example Fayfa which is about 90 km east of Jizan, the annual average of precipitation reaches up to 600 mm. This sharp increase within a very short distance is due to the sudden presence of the South Tihamah mountains.

Fig. 4.8 illustrates that the annual isohyets of 50, 100 and 200mm are seen to be separated from each other in the plains area, while the isohyets of 300, 400 and 500 mm are closely distributed in the highlands, which indicates that the gradual increase of rainfall from coastal areas to high mountains, and the highlands receive most of the rainfall in the province. Indeed, this takes the form of sweeping floods causing considerable wearing in the upper parts of the valleys and depositing sediments in the lower parts. These floods greatly endanger arable lands to a large extent and usually destroy the earth dams.

4.2.5 Temperature

Jizan province is located in the hot area ($16^{\circ} 15'$ - $17^{\circ} 45'$ north), which naturally affects its temperature. However, because of

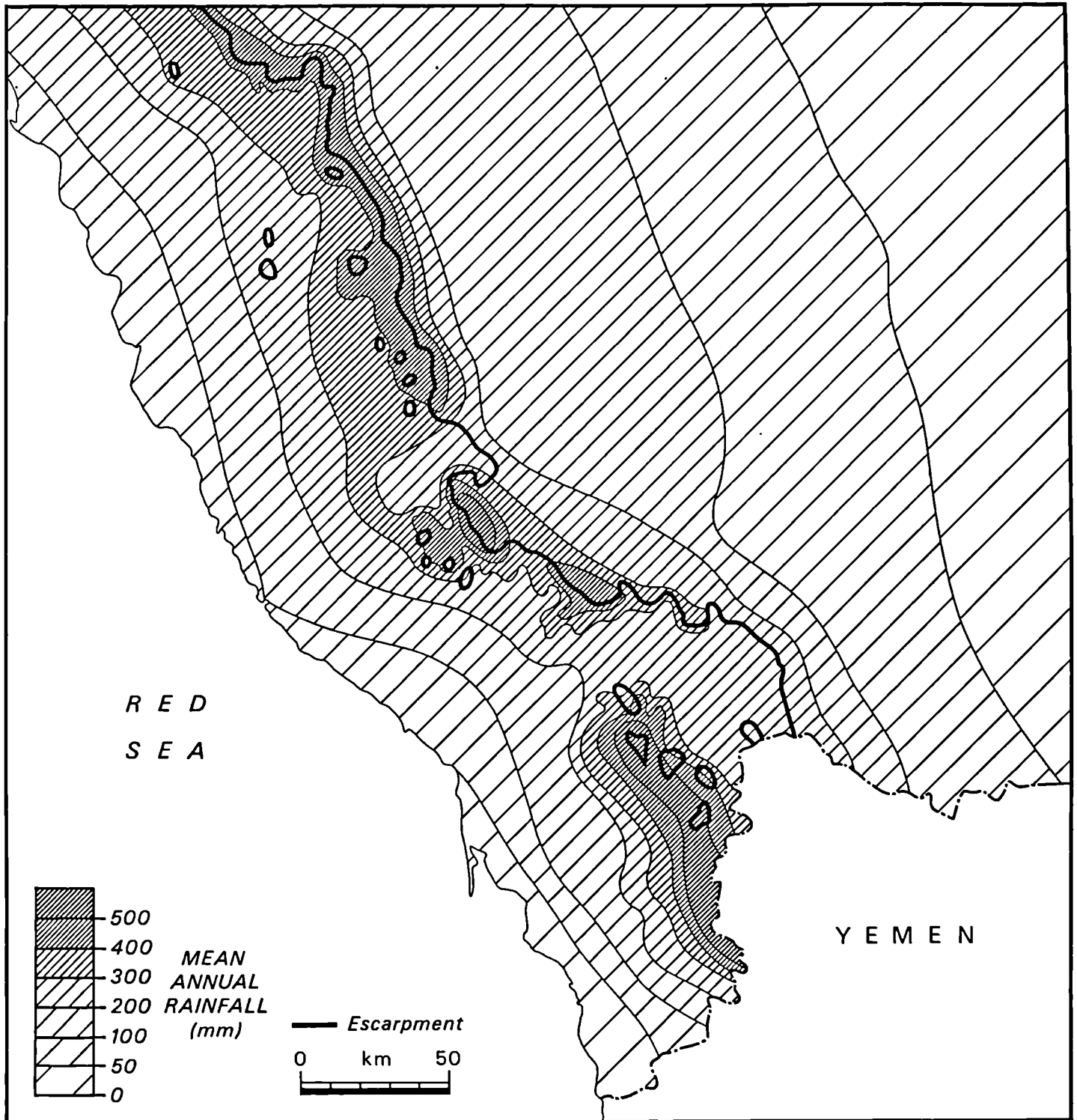


Fig.4.8 Isohyets of the Mean Annual Rainfall in South Tihama

Source: Abdulfattah, 1981

its terrain, we find some differences of temperature which vary from the plain to mountain areas. Jizan province's climate is characterized by a narrow range. The hottest period is from June to September, while the mean monthly temperatures range from 25°C in January to 35°C in June. However, because of terrain variations, we also find changes in the mean temperature which appears in the dual disparity of the terrain. In the coastal town of Jizan, for example, temperature in the summer ranges between 33 and 40°C, whereas in Sabya, which lies further inland, it reaches 36°C. It is noticed that mean temperature decreases as we move further inland towards the heights. In Fayfa, for example, at 1800 m above sea level, mean temperature reaches 22°C in the summer.

Even in the winter, temperature only drops moderately, since the temperature range does not often exceed 10°C. In Jizan town, the mean temperature for the coldest month (January) is 26.1°C though it drops in Sabya to 25.5°C. However, because of altitude, mean temperature may sometimes drop drastically; in Fayfa, for example, it reaches 15°C in the coldest month.

Humidity is high along the coast where it ranges between 60 and 80 per cent during the summer. Of all other cities in the area, Jizan town is most affected by humidity, but the more we move further inland, the less humid it becomes. In Sabya, for instance, humidity mean reaches 64 percent, whereas it reaches 25 per cent in the mountains.

Furthermore, Jizan province is exposed to sand storms in May and June, which cause very poor visibility.

4.3 Administrative Structure

It is important to understand the local administrative set-up in the province, because the level of administration plays an important role of rural development. The provincial governor represents the high level of administrative structure in the province, and has direct relations with the high level of administrators in the kingdom. Jizan town acts as the capital of the province and the location of most of the ministry branches and government offices.

Below the provincial headquarters, there are sub-district centres each with its own governor. One important fact related to these sub-district centres is that most of them are based on their important function, particularly their role as rural markets. These markets have major functions related to their central location, their being catchment areas with a high density of rural population, and their links with urban centres. These major factors have led to the setting up of an emirate "administration centre" nearby. We can see, therefore, that the administrative units have been based on the functions of these settlements. Jizan town, because of its middle location and its size, has been chosen as the provincial capital, followed by larger traditional weekly markets as urban centres and small weekly markets which are distributed in rural areas. It is therefore important to note that the last category of towns have important functions and cover the province. So, the concentration of development services in these centres will be vital and provides a methodology in terms of rural planning and development.

Below the sub-districts and local governors, there are main tribes. These tribes have their main shiekhs, or heads of tribes, who are representatives of the tribes either in administrative centres or outside the province. Each main tribe has its own land distributed on one valley bank. Most of the emirates seem to be defined according to the tribal affiliation and very often the emirate bears the name of the main tribe, for instance, Ahad al Masariah, Qoz al Jafirah, Bani al Hurrath, and Bin Malik.

The main tribe is divided into subdivision tribes called qabilah. Each qabilah has a shiekh and village, the size of which varies from a hundred to several thousand individuals. The qabilah is moreover, subdivided into larger groups called Fakhd and the Fakhd is divided into smaller groups called Jamah, each group having its own sheikh. It is important to note that each unit in the above hierarchy is responsible to the next rank above it. In practice, the system is much more centralized, and very often decisions have to be obtained from Riyadh.

4.4 The Market System in Jizan Province

Markets play an important role in the socio-economic activities of the people in Jizan province. It is, therefore, important that the study of rural development should include understanding of the market system, particularly in developing countries. Thus, for example, Thomas (1972, p229) has commented that:

In less developed countries, the connections between a man and his physical environment, and between a town and its

hinterland, tend to be immediate, tangible and direct. No better example of these connections can be cited than food supply and demand. Food supply varies seasonally with harvest cycles and spatially with agricultural production, while demand is seasonally constant but varies spatially with population distribution. Towns are intense food deficit points located within large areas of local consumption.

Obviously, the geographic position of Jizan province has to do with its being an important trade and market for the following reasons:

- The province has good arable land for agricultural production such as crops and livestock.
- The province is more populated than any place else in the country.
- For several centuries caravans have passed throughout this area carrying Indian and Yemen products to Hijaz and Damascus northwards, and carrying Mediterranean products back to the south.

It is through the local markets that goods are absorbed and most agricultural produce enters the economy. This north to south trade, was developed along the routes that passed through the area where crops and livestock were collected to be sold outside the province, and on the other hand, trade took place in imported consumer goods such as clothes, coffee, and spices which were brought through the area from north to south.

The system of markets in the province is a mixture of both weekly markets and daily markets. It is common to find daily markets and

periodic or weekly markets in urban centres, but the weekly markets are the most striking feature of the province.

4.4.1 Periodic Weekly Markets

Weekly markets play an important role in the life of the population in Jizan province, particularly in rural areas. These markets are not only rural phenomena, they are also common in large urban centres. The market day starts early in the morning from 7.00am to 6.00pm. The peak time is between 10.00am and 2.00pm. This market occurs only once every seven days.

Eighmy (1972, p302) has defined the periodic market as "a specific gathering place where attendance is heavy for one day with market-week falling off precipitously, frequently to zero on other days." This set-up is usually called according to the day of the week or the place where the market is held. In fact, this cyclical weekly calendar is common to all sub-districts, so that each group of villages is integrated with a sequence of the market throughout a seven-day period. The possible reasons behind this as Hodder et al. (1974, p138) said, are the lack of storage facilities, elementary transport facilities, and a population density too low to support continuous trading.

Obviously, weekly markets in the province have important implications for rural settlement study with elements of their economic, social and political functions. They are places for selling and purchasing of local products and manufactured materials coming from

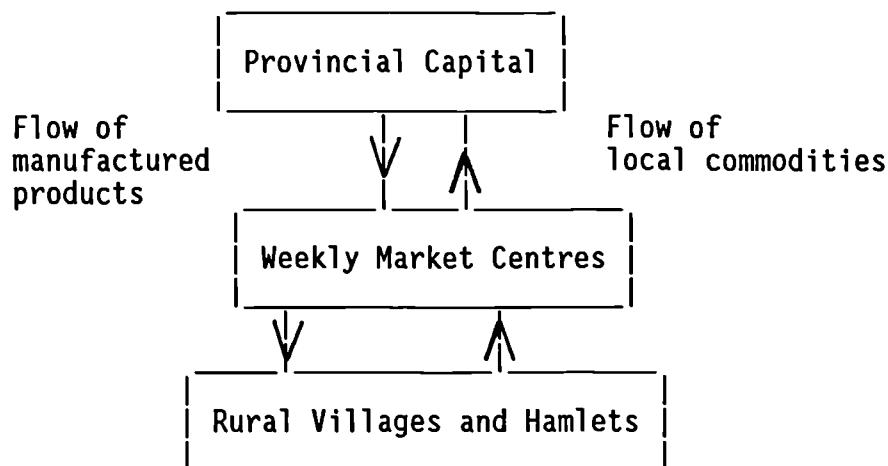


Fig.4.9 The Primary Functions of Weekly Markets as Centres for Exchange. (a) shows the local handicrafts, while (b) shows the imported manufactured articles.



overseas (see fig.4.9). Most of the industrial products are distributed from the province's capital (Jizan town) as this is an important seaport in the south-west of the country. From there they are conveyed to the weekly markets, and thence to the villages and hamlets in rural areas. Moreover, these weekly markets act as places for the collection of various agricultural products, livestock and various handcraft goods made by local craftsmen, so that they can be sent to the provincial capital and thence to outside the province (Fig. 4.10).

Fig. 4.10 The Role of Weekly Markets in the Flow of Goods and Services



Moreover, these centres are the meeting places where various groups and individual meet each other to discuss social issues. They are also used for dissemination of government news and religious information. As has been noted by Hodder (1965, p50), "these markets are essential elements of the local indigenous market structure of most underdeveloped countries as they were of medieval Europe."

There are eighteen weekly markets in the province (see Fig.4.11). Four of these markets are held in the larger urban centres of Sabya, Abu Arish, Sametah and Baish, while the rest are distributed over the rural areas of the provinces. Recently, these weekly markets have retained a certain importance as witnessed by the hundreds of cars which visit them. Moreover, they have played an important role in the structural formation of the rural areas right up to recent years. For example, in many cases, the role of markets in providing a meeting and trade centre has led to the setting up of an emirate administration centre nearby. This in turn has attracted other services and facilities such as a police station, a secondary school, a court, and a health centre.

It is important to note that any strategy for rural development within the province should centre upon small towns which are distinguished by weekly markets. These are the places where the rural population meet regularly and come into contact with each other in the course of their activities.

4.4.2 Daily Markets

The characteristics of daily markets is their continuous character, as distinct from weekly markets, throughout the entire day, half a day, or in the early morning. The entire-day markets are an urban phenomenon, while half-day and morning markets are of a rural character and widespread in the province. Obviously, urban centres that include the capital of the province and other municipality centres have started to consolidate daily markets, possibly because of

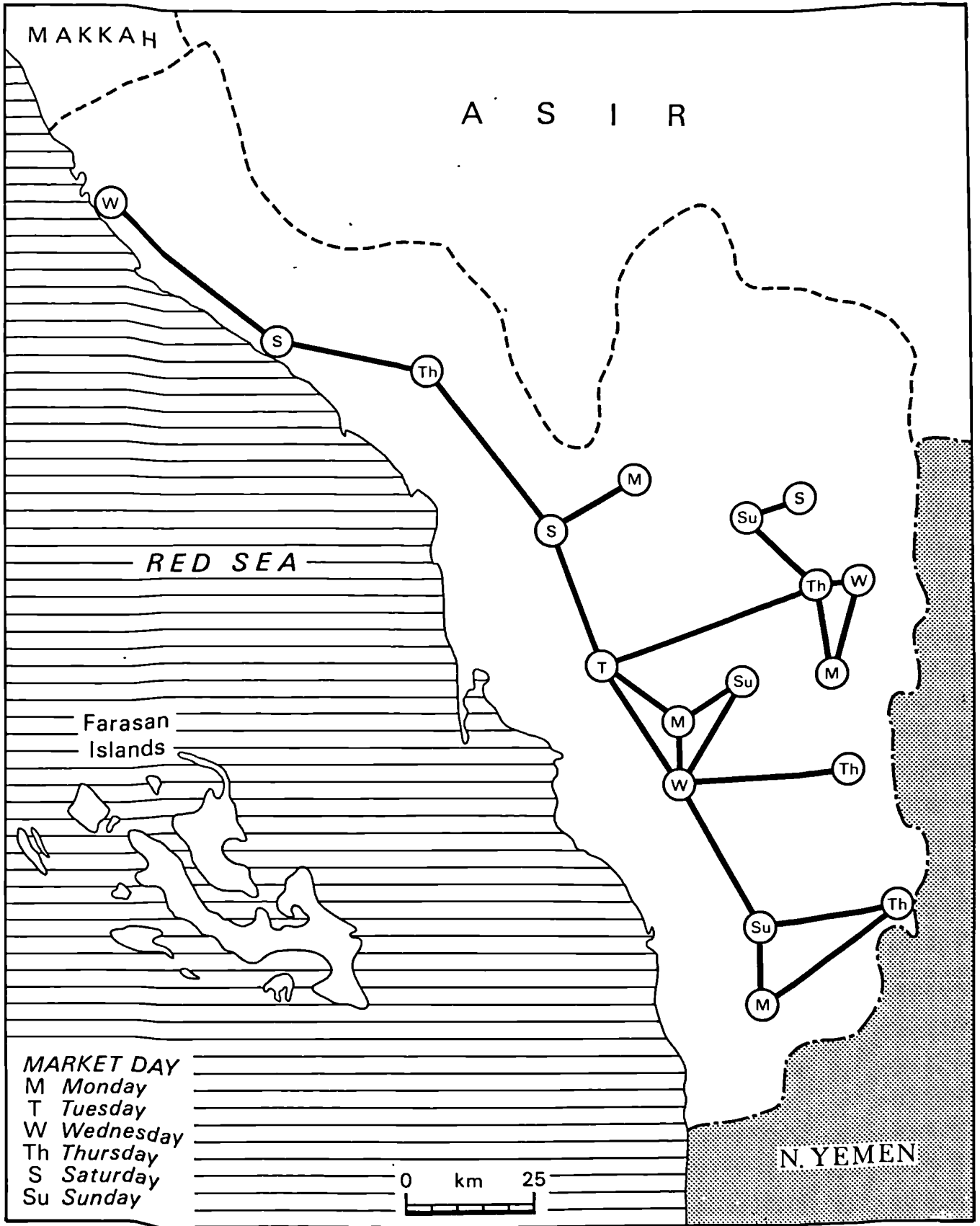


Fig.4.11 Weekly Market System in Jizan Province

several reasons, such as improving the main level of communication, and concentration of most of the socio-economic services in these centres as larger urban centres in order to make them qualify as development centres. Hodder (1965, p57) explains the daily market system when he wrote that:

One of the most striking features about daily markets is that, unlike periodic markets, they show a clear correlation in their location with the distribution and hierarchy of settlements. In brief, the larger the town, the more numerous and larger daily markets it is likely to contain.

Table 4.1 and fig.4.12 classifies the markets in the province. This classification is based on the location of markets (urban and rural) and on the frequency of meetings (daily or weekly). The following will serve as a brief description covering the types of daily market in the province.

Provincial Urban Daily Markets

This market is held in Jizan town as the largest urban centre and capital of the province. The market day normally lasts from 8am to about 11.00pm or nearly midnight. This market provides both wholesale and retail facilities. According to the census of private establishments made in 1981, this centre dominates 43 per cent of the total business of urban establishments in the province. Therefore, the market is considered as the highest order in the hierarchy of the markets in the province.

Table 4.1 Classification of Markets in Jizan Province

Market Type	Periodicity Schedule	Central Function	Category of Market	Example of Market
provincial urban market	daily	wholesale & retail facilities	1	Jizan
urban market	daily with important market day weekly	wholesale & retail facilities (less than the above market)	2	Sabya, Abu Arish, Sametah, Baish
rural market	half-day with important market day weekly	retail and incipient bulking	3	Al Ahad, Al Khawbah, Al Aridah, Dahmad
village and roadside market	early morning	retail	4	Al Thabiyah, Karbus, Ad Dagrir

Urban Daily Markets

These markets include the larger urban centres of Sabya, Abu Arish, Sametah and Baish. The daily markets of these centres last from 8.00am to 8.00pm, but the total attendance and wholesale and retail trade is smaller than in Jizan centre. In addition to their daily markets, they have important weekly markets which are held on one day a week (Thursday, Wednesday, Monday, or Saturday respectively). Sabya comes as the second market in the province with 20 per cent of the total business of urban establishments; Abu Arish is considered as the third with 13 per cent; Sametah as the fourth with 11 per cent; and finally, Baish with 10 per cent.

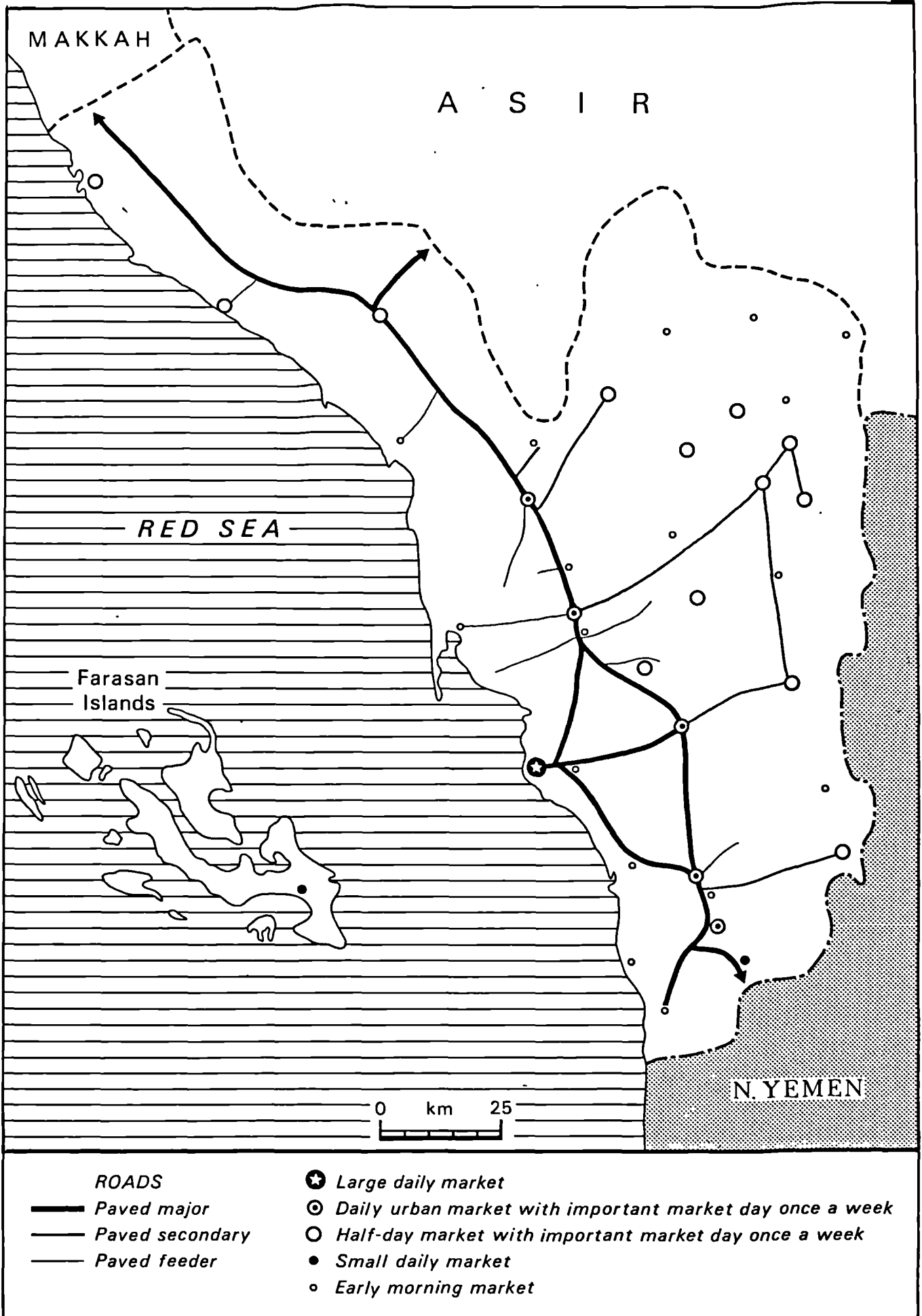


Fig.4.12 Classification of Market System in Jizan Province

In fact, the urbanization factor has a clear impact on the development of daily markets in these towns. This change is associated with modern road networks and population density increases establishing many services. This appears in the composition and proportion of different kinds of goods and overseas products that are available in these centres. The daily markets of these towns are operated by the municipal departments of these towns. All the markets meet in concrete stores with good services for rubbish collection and facilities such as electricity and water. One striking feature is that these urban centres have progressively established a series of permanent trading activities and services. The construction of a few dwellings around the old centres in these places has led to growth of the towns, as has the neighbouring road along which a series of semi-industrial and trading activities have been created at an earlier date.

Rural Daily Markets

These markets are located in all sub-emirate centres and are characterized by half-day markets from 7.00am to 1.00pm. Fish, meat and vegetables are the major products traded in in these markets. Some centres, like Al Ahad, Al Khawbah, and Al Darb, provide both retail and small-scale wholesale facilities. In fact, all the weekly markets are held in these centres and the half day of marketing shows the first stage of the urban process by which the rural market becomes transformed from a weekly meeting to a daily meeting. Obudho (1975, p329) described this process when he noted that "as the market meets daily, more and more urban oriented conveniences are constructed and the markets become trading centres."

Village and Roadside Daily Markets

This type of market is located in a few larger villages and on the junction of secondary roads. These markets have a limited number of buyers and sellers. They occur to satisfy a particular demand such as for fish and meat, during a short time from 8.00am to 11.00am. The size of these markets increases during the fasting days (Ramadan) when the demand for specific commodities, such as fruit, sweets and vegetables, is high.

From the above discussion, it is clear that the urban daily markets are few and are concentrated along the main roads (see chapter nine). These urban centres are not easily accessible to the inhabitants of remote rural areas.

This indeed returns us to the consideration that most of the development strategies are urban oriented, and most of the social and physical planning proposals have concentrated on property in the urban centres. The result is that there is a high rural to urban migration. Moreover, the improvement of urban centres has not gone hand in hand with rural development in order to stimulate the traditional agricultural sector. Rural and urban problems should not be viewed in isolation but as an interrelated spatial system. So, the small towns which hold the weekly markets and dominate the low level of settlement hierarchy, and cover not only the widest geographic areas, but also contact the widest spectrum of the rural population, do not have enough socio-economic and physical infrastructural facilities. They are also not adapted to act as urban markets; they are still scheduled with

weekly and morning markets and have not undergone much change in form and function since the onset of the development plans' strategy.

Indeed, small towns that have been distinguished by weekly markets deserve special attention. Hodder, (1962, p103) argues that:

The importance of the local markets is indicated by their large number and by an almost bewildering variety of types. One possible classification can be made on the basis of functions, and in particular on the place of any particular market in wholesale and retail distribution chains for local food stuff, cottage industrial products and imported goods.

It is important to note that agricultural productivity needs modern agricultural implements including fertilizers, seeds, marketing, credit and management facilities, and physical infrastructure. These inputs cannot be acquired in weekly markets; they must be obtained from rural service centres. Therefore the strategy of rural planning should develop weekly markets to minimize rural movement by providing the low level goods and services to satisfy the needs of the population, as well as to extend the urbanization level in the province. These are the objectives of this study.

4.5 Population of Jizan Province

The social organization of the population in Jizan province has been established according to tribal affiliation. Extended families are the most common and are the typical form of social grouping in the rural areas of the province. The extended family consists of a number of 'nuclear' families which are genealogically related through the male

line and have settled together in a neighbourhood, either in a village or hamlet.

Traditional tribal law plays a significant role in the governing of economic and social relationships between the members of families. For example, it is very common to find marriages between cousins, so that people originate from the same family group. Moreover, cooperation and sharing are other factors affecting the life of the individual and rural communities.

Agricultural activity is the most striking feature of the rural economy. It is performed predominantly by hired labour and, to a lesser extent, by the family farm system. This system has recently had a significant impact on the structure of agriculture as well as on village society, when most labourers have migrated to urban areas where better jobs and salaries are available. The following analysis will describe the population growth, movement, density, and labour force in the province.

4.5.1 Population Growth and Movements

Population factors play a major role in the process of development. The features of population which are most relevant to economic activity are dependent on size and pattern of settlement. The pattern of settlement actually determines where goods and services are to be supplied to meet demand. Moreover, it determines where some of these goods are produced. So, since the population is both the means and the ultimate end of development, it is important to understand its

size and distribution which are important for development planning. But we are hampered by not having necessary data and statistics to hand. This study, therefore, depends on the 1974 population census although it is out of date now as there have been great economic changes which have altered the kingdom's population distribution map, particularly after the rise in oil revenues, the growth of old urban centres, and the emergence of new ones as service centres. The growth of these centres has taken place so rapidly that it has severely affected the agricultural sector, inducing a large number of people to migrate from the rural areas to the more attractive urban centres. This migration has resulted in a great demographic transformation related to growth rates under the impact of migration, which is geared both economically and chronologically to the influence of oil on the economic urban conditions and the ensuing concentration of services in certain areas. These factors have attracted people seeking better opportunities and living standards.

Unfortunately, despite this rapid transformation, there are no reliable statistics that can help measure this change and define the new trends. All that has been written on the subject amounts to no more than tentative studies such as surveys. Most of these studies have been motivated by interest in the urban areas and have been sponsored by the Ministry of Municipal and Rural Affairs. Some of these studies deal with Jizan province and are the only reliable sources of information which can be compared with the 1974 population census in order to register the population orientation in the province.

According to the population census of 1974, (see Table 4.2 and

Fig. 4.13), the total population of the province was 408,334 inhabitants.

Table 4.2 Population by Age Group and Sex in Jizan Province, 1974

Age Group (years)	% of population			% of population		
	Males	Females	Total	Males	Females	Total
less than one year	6638	6429	13067	3.3	3.1	3.2
1 - 4	29441	29351	58792	14.5	14.3	14.4
5 - 9	35424	33422	68846	17.5	16.2	16.9
10 - 14	26405	23230	49635	13.0	11.3	12.2
15 - 19	18757	20059	38816	9.2	9.7	9.5
20 - 24	11600	14999	26599	5.7	7.3	6.5
25 - 29	10476	14499	24975	5.1	7.0	6.1
30 - 34	10526	12728	23254	5.2	6.2	5.7
35 - 39	10989	10211	21200	5.4	5.0	5.2
40 - 44	10146	9964	20110	5.0	4.8	4.9
45 - 49	7825	6355	14180	3.8	3.0	3.5
50 - 54	7806	7373	15179	3.8	3.7	3.7
55 - 59	4465	3410	7815	2.2	1.7	1.9
60 - 64	5739	6289	12028	2.8	3.0	2.9
> 65	6468	7370	13838	3.2	3.2	3.4
Total	202645	205689	408334	49.6	50.4	100

Source: Population Census, 1974

With regard to the sex composition, 49.6 per cent of the total population were males, and 50.4 per cent were females. On the basis of age structure, 46.7 per cent of the total population were under 15 years of age, 8.2 per cent were over 55 years of age and only 45 per cent came within the economically active group between 15 and 54 years old. This indicates that the majority (nearly 55 per cent) of the total population is economically dependent on the smaller working group of 45 per cent of the total population. Moreover, according to this census, the rural population in the province was 308,313 persons, or

FEMALE

MALE

Age Groups

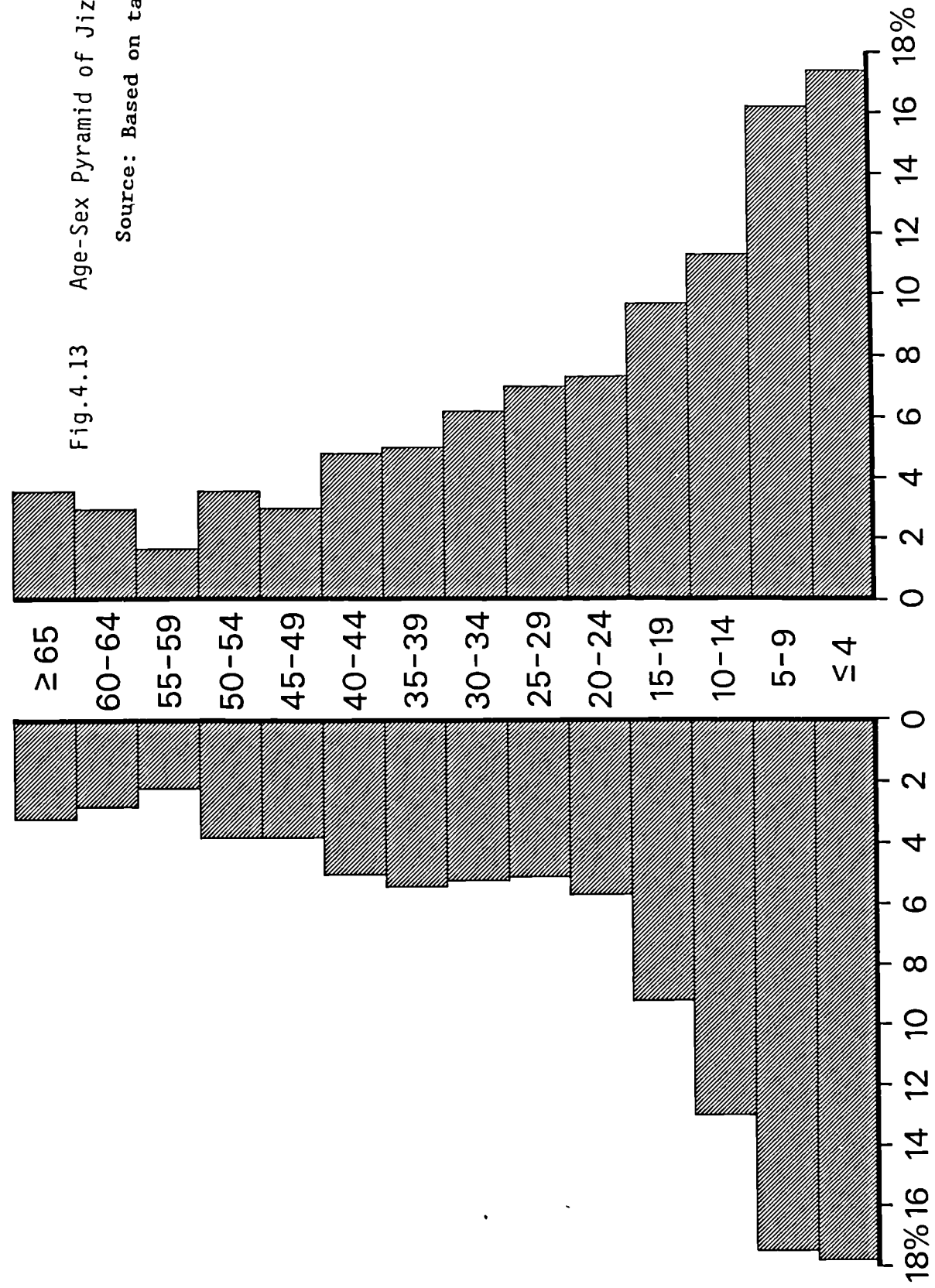


Fig.4.13 Age-Sex Pyramid of Jizan Province
Source: Based on table 4.2

75.5 per cent of the total population, while the population of the larger urban and small centres was 100,021 inhabitants, or 24.5 per cent of the total population (see table 4.4).

Table 4.3 Estimation of Annual Percentage Change in the Population of the Province Between 1974 and 1995

Rates	Years			
	1974-1979	-1985	1985-1990	-1995
Birth	4.4	4.2	4.0	3.8
Death	1.9	1.7	1.5	1.3
Natural Growth	2.5	2.5	2.5	2.5
Net Migration	1.5	1.0	0.9	0.8
Net Growth	1.5	1.5	1.6	1.7

Source: Serote Survey, 1980

Table 4.3 shows that the natural growth rate of 2.5 per cent in the province is considered reasonably moderate since most rates in the country range between 2.5 and 3 percent. However, the province has actually witnessed migration to other regions. The migration rate between 1974 and 1979 (when the oil revenues started to affect the urban centres) was 1.5 percent. This encouraged inhabitants of the remote rural areas, such as the people in Jizan province, to migrate to the more dynamic areas in the middle belt regions. The estimation also indicated that the migration rate will drop to 0.8 per cent between 1990 and 1995. This may be due to the distribution of some development projects in the province that are expected to lower the migration rate.

According to a population survey, the rural population in 1980 decreased to 302,336, about 68 per cent of the total population, whereas the population of larger urban centres and small town increased to 140,842 persons representing about 32 per cent of the total population. It is estimated that by 1995, the population will reach 562,318 persons, the percentage of people living in larger urban centres and small town will increase to 55.8 per cent, while the percentage of the rural population will decrease to 44 per cent of the total population, (see Table 4.4 and Fig. 4.14).

Clearly, the downward curve of the rural population and the increase of the urban population gives a strong indication that the rural population had in fact migrated and continues to migrate to urban centres either inside or outside the province. This factor indeed explains why the growth rate of the province is less than the natural growth (Table 4.3).

With regard to rural migration, there are two types of migration. The first is to urban centres outside the province, particularly in the middle belt regions (eastern, central and western). Secondly, there is the daily migration by people going to work in major towns of the province. Obviously, these two aspects of movement usually lead finally to a definitive change whereby people come to stay permanently in urban centres. Unfortunately, there is no available data concerned with rural migration either outside or within the province. The fieldwork survey (see Table 4.5 and Fig. 4.15) show that about 70 per cent of respondents, had sons or relatives who have moved outside the province for employment opportunities. Fifty-seven per cent of these

Table 4.4 Estimation of Population Between 1974 and 1995 by Category of Settlements

	1974	1979	1980	1985	1990	1995
Total Population	408,334	436,631	445,178	477,429	516,865	562,318
% change p.a	-	1.5	1.5	1.5	1.6	1.7
Rural Population	308,313	304,071	302,336	289,418	271,355	248,256
% of Change p.a	-	-0.3	-0.6	-0.9	-1.3	-1.8
% of Total Population	75.5	69.6	67.9	60.6	52.5	44.1
Urban Population (> 5000)	65,529	88,940	94,974	129,293	170,880	219,910
% of Change p.a	-	7.0	6.8	6.4	5.7	5.2
% of Total Population	16.0	20.4	21.3	27.1	33.1	39.1
Small Towns (2000-5000)	22,870	29,660	30,587	39,323	50,157	63,530
% of Change p.a	-	5.5	5.3	5.2	5.0	7.8
% of Total Population	5.6	.7	6.7	8.2	9.7	11.3
Other Emirate Centres (less than 2000)	11,622	14,560	15,281	19,395	24,473	30,622
% of Change p.a	-	5.1	5.0	4.9	4.8	4.6
% of Total Population	2.8	3.3	3.4	4.1	4.7	5.4
Total Population of Major Towns and Small Towns	100,021	132,560	140,842	188,011	245,510	314,062
% of Change p.a	-	6.4	6.2	6.0	5.5	5.0
% of Total Population	24.5	30.4	31.6	39.4	47.5	55.8

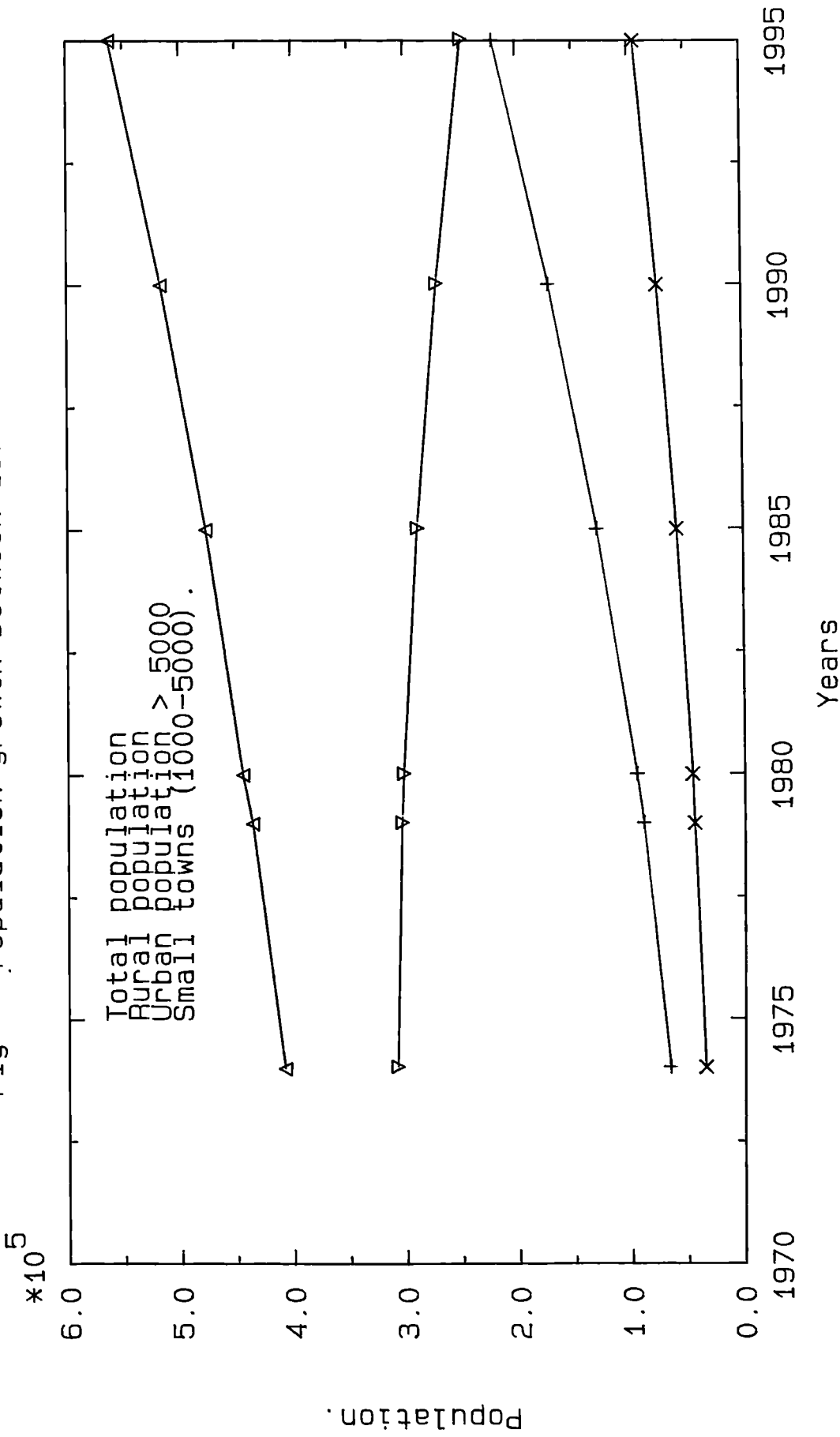
Source:

Compiled from:

* 1974 Population Census of Jizan province

* Serete Survey, 1980

Fig4.14 Population growth between 1974 and 1995.



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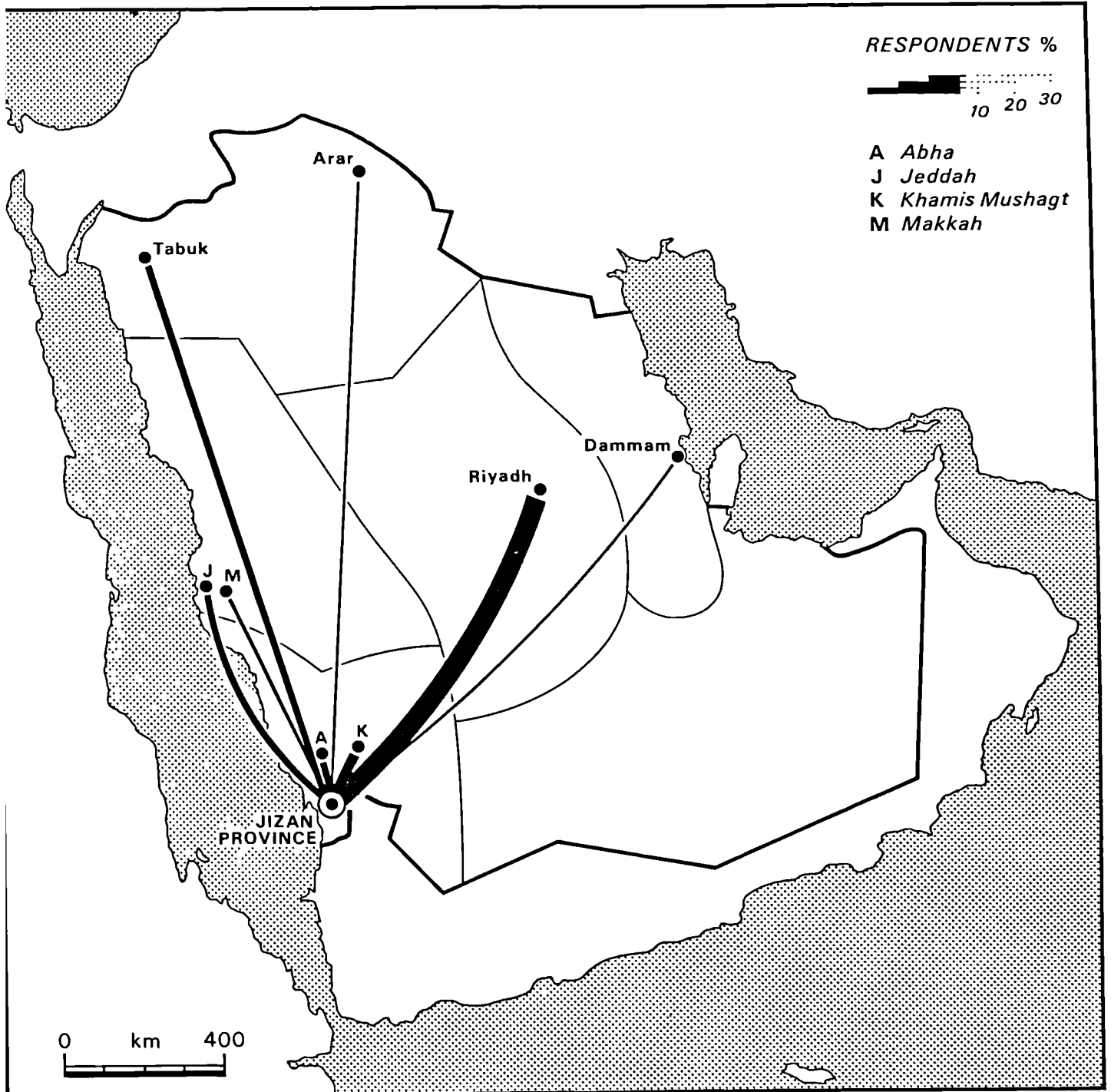


Fig.4.15 Migration out of the Study Area

Table 4.5 Destination of Rural Movements Outside the Province

Centre	Number of Respondents	Percentage
Riyadh	28	32.6
Khamis Mushayt	16	18.6
Jeddah	13	15.1
Abha	10	11.6
Tabuk	9	10.5
Makkah	5	5.8
Dammam	3	3.5
Arar	2	2.3
Total	86	100

Source: Fieldwork, 1989

movements were to the middle belt regions where the larger urban centres are located. Riyadh (the capital of the country) dominated the highest share of external movement with 32.6 per cent. This may be due to the high concentration of administrative, social, and economic activities in this centre. The city of Jeddah comes in the second position with 15.1 per cent, followed by Makkah with 5.8 per cent and Damman with 3.5 per cent. Indeed, all these centres are considered as the largest places and act as urban cores in the country. The southern region dominates about 30.2 per cent of the external movements. Khamis Mushayt accounts for the highest share of 18.6 per cent. This is due to the opportunities of employment in the army in this centre. Abha is considered as being in the second position for external movements, which is due to the location of branches of two universities in this town, which force the young people in the province to travel to continue their higher education. The northern region accounts for a slight proportion of external movements from the province with 12.8 per

cent. Tabuk and Arar are the places with most movements (10 and 2 per cent respectively) where the opportunities of jobs in the army are available.

Table 4.6 Movements of Respondents within the Province.

Centres	Number of Respondents	Percentage
Jizan	11	23.4
Abu Arish	8	17
Sabya	4	8.5
Fayfa	4	8.5
Baish	3	6.4
Sametah	2	4.2
Al Khawbah	3	6.4
Ad Darb	3	6.4
Al Aridah	2	4.2
Al Ahad	2	4.2
Al Mussam	2	4.2
Dhamad	1	2.3
Total	47	100

Source: Fieldwork 1989

Internal movements are concerned with the daily migration of people going to work or buying and selling outside their villages - either to larger urban centres or to small towns. Table 4.6 and Fig. 4.16 show that the larger urban centres have the highest share (68 per cent) of the internal movements. Jizan centre, the capital of the province, attracts the highest number of the rural population with 23.6 per cent, followed by Abu Arish with 17 per cent, Sabya and Fayfa with 8.5 per cent each, Baish with 6.4 per cent, and finally Sametah with 4.2 per cent. These towns are the places of government services and act as larger urban markets. The remaining rural towns such as Al

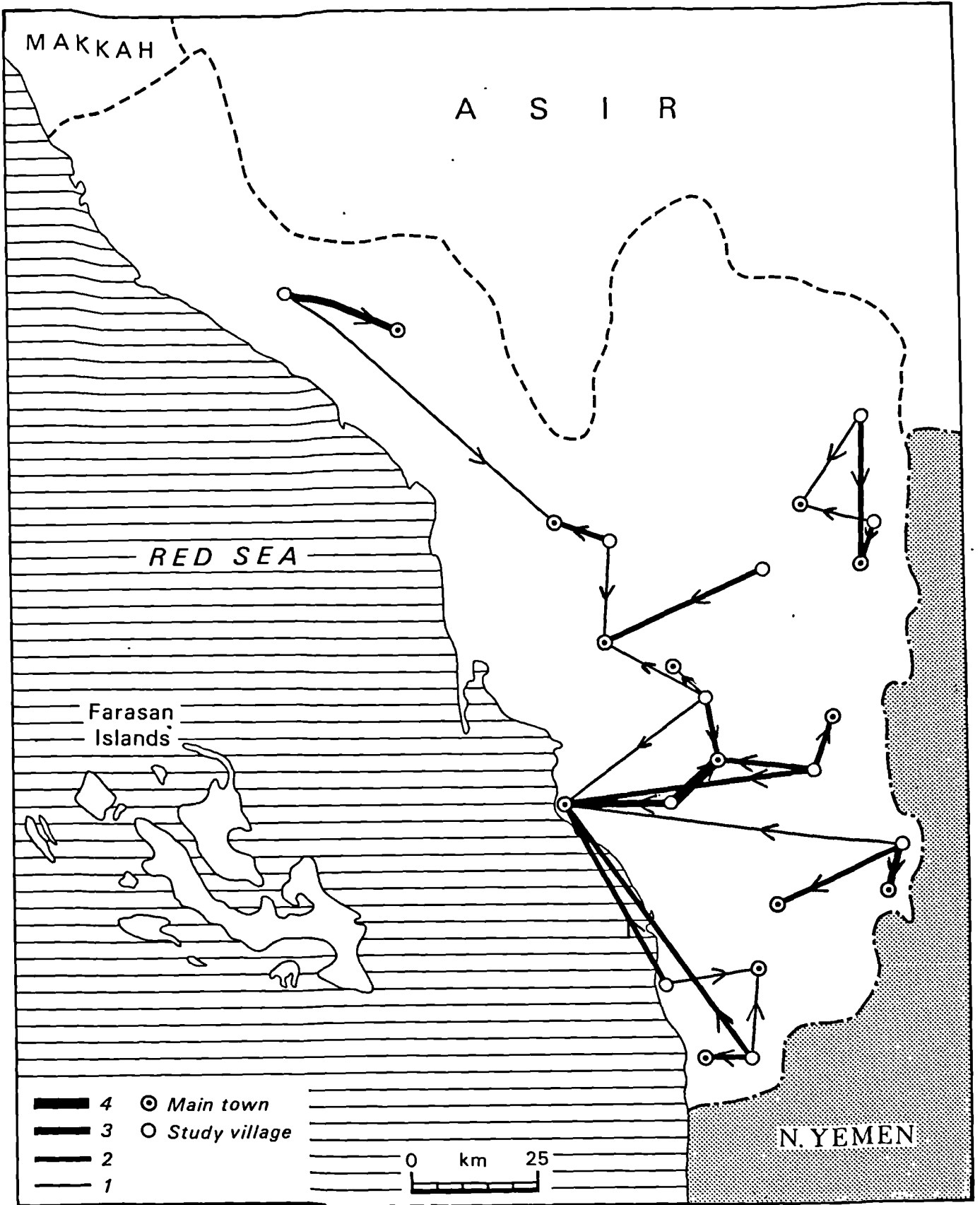


Fig.4.16 Internal Movement

Khawbah, Al Aridah, Ad Darb, Al Mussam, Al Ahad, Dhamad and Ad Dyer, accounted for about 32 per cent of the respondents internal movements. Al Khawbah and Ad Darb account 6.4 per cent of the internal movements each, followed by Al Aridah, Al Mussam, Al Ahad, and Ad Dyer with 4.2 per cent each. Finally, the town of Dhamad accounts for only 2.3 per cent. These towns also act as locations for some government services and traditional weekly markets.

4.5.2 Population Density

The study of rural settlements requires an understanding of the population density. The significant goal of this is to understand where the people live and are concentrated and the reasons that affect the distribution. This information is useful for rural planning.

As regards population density, Jizan province had the highest figure with 27 persons per sq.km. This compares with the national population density in 1974 of about 3.11 persons per sq.km and with high second provinces with a density of about 13 and 12 persons per sq. km in Eastern and Makkah provinces respectively. Table 4.7 reveals that within the province the population density varied between 166 and 3 persons per sq.km. This may be due to the effects of physical and socio-economic factors.

Fig. 4.17 shows that the middle emirates of the plains area from Al Tuwal in the south to MisLiyah in the north have the highest population density. For example, in the emirate of Al Tuwal, the population density was more than 100 persons per sq.km, and in the

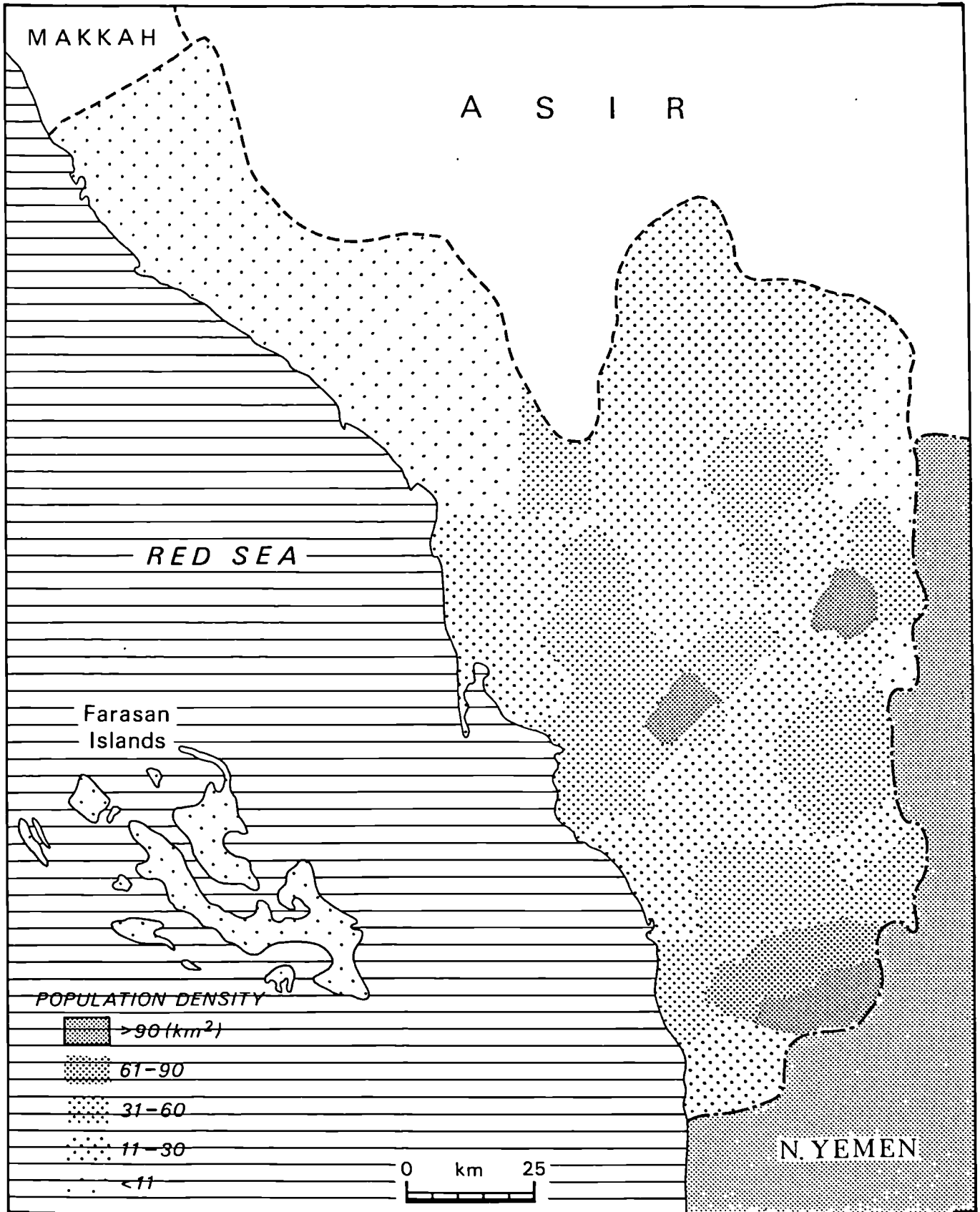


Fig.4.17 Rural Population Density in Jizan Province in 1983

Source: Based on Table 4.7

Table 4.7 Rural Population Density in the Study Area, 1983

	Emirate Name	Population	Area km ² person/km ²	Population Density
1	Al Mussam	7,887	327	24
2	Al Tuwal	16,830	159	106
3	Dihamah	13,452	226	59
4	Sametah	32,750	435	75
5	Al Khawbah	13,135	289	45
6	As Salb	3,225	135	24
7	Al Ahad	29,911	533	56
8	Al Madhaya	7,190	315	23
9	Abu Arish	19,569	682	29
10	Al Aridah	22,926	478	48
11	Wadi Jizan	16,166	322	50
12	Dhamad	19,061	115	166
13	Ash Shuqairi	8,391	176	48
14	Sabya	35,845	832	44
15	Al Qoz	7,839	258	30
16	Al Aliyah	5,828	481	12
17	Baish	1,986	128	16
18	MisLiyah	8,463	236	36
19	Itwad	1,535	267	6
20	Ad Darb	9,837	1288	8
21	Ash Shuqaiq	3,282	514	6
22	Al Qahmah	3,427	1358	3
23	Al Haqu	3,980	378	11
24	Al Kudmi	8,347	481	17
25	Harub	9,094	289	31
26	Munjid	4,820	151	32
27	Iban	10,152	373	27
28	Al Humirah	6,069	274	22
29	Qais	622	109	6
30	Ad Dyer	10,741	238	45
31	Ar Rabuah	5,441	323	17
32	Al Zaydan	2,150	334	6
33	Al Hashr	2,415	145	17
34	Fayfa	17,004	144	118
35	Ar Raith	4,035	175	23
36	Frasan	4,186	810	5
	Total	378,581	13,778	27

Source: Compiled from Sogreah Survey, 1983

emirate of Dhamad the density was more than 160 persons per sq.km. Clearly, the high density of population in the middle part of the

plains area is not due alone to the natural aspects of agricultural life such as high fertility of soil and frequency of flood irrigation, but also to the high degree of distribution of communication facilities, as well as social and economic activities.

On the other hand, the areas which are less affected by flood are those related to coastal areas, where the density was low, in fact, less than 30 persons per sq.km. Moreover, these areas are relatively isolated from the dynamic areas, and benefitted very little from the development services. The inhabitants of the mountain areas are generally dispersed, less than 30 people per sq.km, except in some emirates such as Fayfa, Al Aridah, Al Khawbah and Ad Dyer where the density was relatively high. This relates to the availability of soil on the mountain terraces. These areas are also isolated from the developing areas by lack of communications.

4.5.3 Labour Force in Jizan Province

The labour force in the country started to change significantly after the discovery of oil. Jizan province as a rural area was affected by two groups of interacting factors which have undergone great changes in the aspects of the labour force structure. These factors are namely push factors, which relate to rural areas, and pull factors, which relate to urban areas.

The majority of the rural population in the province (75.3 per cent) were engaged in the agricultural sector before 1974. However, this sector has been recently affected by a flood of rural migration to the urban areas. Obviously, rural land abandonment factors combine with town attraction factors to give rise to considerable levels of migration of farm workers. The reasons behind this phenomenon are:

1. The low level of agricultural income which is subject to the traditional agricultural practices. This low income does not allow farmers to meet all their needs, compared with higher incomes available in government employment.
2. Difficult farming conditions are accompanied by lack of socio-economic and infrastructural services and facilities such as health, education, roads, water and electricity supplies.

3. The wide differences between the urban and rural areas in terms of social styles have tended to produce forms of social competition as rural inhabitants seek to emulate the opulence of urban residents. Thus they feel a need to spend lavishly on such matters as marriages, housing, motor transport, and the other commitments of modern lifestyles. The only way to achieve these goals is to emigrate to the cities where salaries are so much higher.
4. The development strategy model has attempted to concentrate most of the social and economic services in a few urban centres deemed to qualify as development centres. These urban centres clearly became not only places of opportunity for jobs with better salaries, but centres of social and economic activities.
5. Various governmental measures have had the effect of encouraging the rural population to migrate through the numerous offers of employment in various administrations located in the urban centres. This is because of the various forms of financial assistance which are not granted in rural areas, but are proposed only for the population attached to an urban centre, eg. building loans, workshop establishment loans, etc.

In fact, all these push and pull factors have had a great impact on the workforce, manifested particularly in the sharp drop in the number of farmers and a sharp rise in the number of civil servants.

Table 4.8 Shares of Employment by Economic Activity Between 1974 and 1979 in Jizan Province "Eight Emirates"

Economic Sector	Urban Areas		Rural Areas		Total							
	1974	%	1979	%	1974	%						
I - Agriculture and Fishing	1,265	7.2	1,220	5.4	22,439	75.3	11,100	44.6	23,704	50.0	12,320	26.0
II - Handicrafts, Manufacturing and Utilities	1,584	9.0	2,190	9.7	1,630	5.4	1,420	5.7	3,214	6.8	3,610	7.6
Construction	1,374	7.8	1,780	7.9	823	2.8	600	2.4	2,197	4.6	2,380	5.0
Sub-Total Secondary Sector	2,958	16.8	3,970	17.6	2,453	8.2	2,020	8.1	5,411	11.4	5,990	12.6
III - Commerce and Private Services	4,536	25.8	5,800	25.6	3,624	12.2	2,200	8.8	8,160	17.2	8,000	16.8
Transportation and Storage	1,023	5.8	1,240	5.4	826	2.8	320	1.3	1,849	3.9	1,560	3.3
Government Services	7,806	44.4	10,430	46.0	447	1.5	9,240	37.1	8,253	17.4	19,670	41.3
Sub-Total Tertiary Services	13,365	76.0	17,470	77.0	4,897	16.5	11,760	47.3	18,262	38.5	29,230	61.4
Total Activity	17,588	100	22,660	100	29,789	100	24,880	100	47,377	100	47,540	100

Source: 1974 Population census
1979 Socio-Economic Survey, Serete, 1980

Unfortunately, there is no adequate up-to-date data relating to this problem not only for the province but also for the country as a whole. The only reliable sources able to provide a picture of the labour force in the province are the population census results of 1974 and the socio-economic survey of 1979 which focused on urban centres and the rural areas of eight emirates in the middle part of the plains area. Table 4.8 illustrates the division of the labour force in the province.

The first sector includes both the main activities that are prevalent in the province, namely agriculture and fishing. In 1974, this sector represented about 50 per cent of the total jobs in the province. In urban areas, this sector represented about 7.2 per cent, most of the workers engaged in fishing residing particularly in Jizan town. In rural areas this sector represented 75.5 per cent of the total jobs in the same year. This high ratio reflects the importance of the agricultural sector in the rural areas as a main source of income.

However, the economic transformation in the country and the great reliance of the people on oil as a main source of income has greatly affected this sector. A larger number of the rural population have renounced farming and fishing and have emigrated to urban towns. In doing so they were attracted by the obvious advantages of various new jobs which flourished under the new oil economy.

Consequently, the agricultural sector in the province in general has been enormously affected. The percentage of farmers dropped from 50 in 1974 to 26 in 1979. The rural areas were mostly affected, where the percentage of farmers dropped from 75 in 1974 to 44.6 in 1979. This clearly indicates how badly the agricultural sector has been hit because of the migration to urban centres and the attraction of the civil service for Saudi youths seeking better livings and higher incomes. As for the Yemeni farmer labourers in the province, many of these also quit in order to seek more rewarding jobs in the construction sector.

The second sector includes industry, handicrafts, and construction. (These are closely related in the country because a great deal of industrial activity depends on the production of construction materials.) In 1974, it accounted for 11.4 per cent of the total jobs in the area. Handicrafts account for 6.8 per cent and construction for 4.6 percent. In urban areas, the total percentage of this sector was 16.8 per cent of the total urban activity, industry and handicrafts representing 9.0 per cent and construction 7.8 per cent. In the rural areas, however, this sector accounted for 8.2 per cent of the total jobs in the same year; 5.4 per cent was accounted for by industry and handicrafts and 2.8 per cent by construction.

In 1979, this sector increased to 12.6 per cent of the total jobs in the area, where industry and handicrafts showed an increase from 6.8 per cent in 1974 to 7.6 per cent in 1979. Construction also showed a similar increase from 4.6 per cent in 1974 to 5.0 per cent in 1979. At the level of urban centres, this sector increased to 17.6 per cent, 9.7

per cent for industry and handicrafts and 7.9 per cent for construction. In rural areas this sector accounted for 8.1 per cent of the total activity, with 5.7 per cent for industry and handicrafts and 2.4 per cent for construction.

The third sector includes trade, transport, and government employment. It had been enormously affected by the oil revenues to the extent that it became a goal for a large number of people and encouraged migration from the rural areas to the cities, ie. from the agricultural sector to the government sector. In 1974 this sector accounted for about 38.5 per cent of the total jobs in the area. The government posts account for the biggest part (17.4 per cent) followed by trade with 17.2 per cent and lastly transport with 3.9 per cent.

At the level of urban centres, this sector accounted for 76 per cent of the total jobs, the government posts having had the highest share with 44.4 per cent, followed by trade with 25.8 per cent and transport with 5.8 per cent. In the rural areas, this sector accounted for 16.5 per cent of the total jobs, trade taking the highest part with 12.2 per cent, followed by transport with 2.8 per cent and finally government posts with 1.5 per cent.

In 1979, however, the ratio of this sector increased to 61.4 of the total number of jobs, government posts accounting for the biggest share (41.3 per cent) trade coming second with 16.8 per cent, and transport third with 3.3 per cent. At the level of urban areas, this sector increased to 77 per cent, ^{the government jobs had 44.4 per cent,} followed by trade with 25.6 per cent, and transport with 5.4 per cent.

Obviously, this sector has undergone great changes in the rural areas where it has increased from 16.5 per cent in 1974 to 47.3 per cent in 1979. The government posts represented 37.1 per cent, trade 8.8 per cent and transport 1.3 per cent. Clearly, the sharp drop in the number of farmers in the first sector has been partially compensated for by the large number of government posts. This clearly indicates the avoidance of agriculture by the inhabitants and their preference for the more rewarding government posts as a result of the income pouring into the province from outside as part of the state budget.

4.6 Conclusion

Jizan province is considered to be a remote or peripheral area in the country. This relatively isolated position has unfortunately affected the province in the late stages of development that has affected the country as a whole. The environmental aspects of the province show a high natural potential with regard to climate, topography, soil, and human resources, which indeed are very promising for agricultural development. However, this sector is characterized by low incomes and traditionalism which have led to the significant tendency of a high degree of farmers' migration.

Clearly, the high level of rural migration is associated with increased opportunities of government employment where better salaries are available than from agricultural activity. The phenomenon of rural migration has a great effect on the rural areas with deserted farmlands and depopulated rural settlements which clearly render the structure of agriculture and rural population unstable.

Undoubtedly, Jizan province, with its high natural potential, would best meet the national objective for agricultural production. However, we must understand that the natural potential of resources is not enough for development. Jizan province requires an enormous variety of social and infrastructural services which can be reached by the majority of the rural population who live at the bottom of the

settlement hierarchy.

PART TWO
CHAPTERS 4 - 9

CHAPTER 5

An Analysis of Rural Settlements in Jizan Province

5.1 Introduction

Despite the extremely rapid process of urbanization in developing countries, with the high rate of migration from rural to urban areas, rural settlements still dominate the occupied land and most of the population still live in the countryside. Bunce (1982, p1), noted that "the majority of the world's land is used for rural activities, and most settlement units are rural. In addition, the reality and importance of rural life and land continues to be significant in the culture of most societies." The study of rural settlement should therefore be the subject of considerable concern among geographers and planners, particularly in developing countries.

In Jizan province, rural settlement dominates much of the land in the province. More than 70 per cent of the population of the province are rural dwellers. The study of rural settlement in the area would lead to significantly greater understanding of rural populations in regard to their way of life, where they live, and their organization in past and present times. This knowledge should prove crucial for any rural planning intended to improve and develop the rural conditions.

The majority of the rural population in the study area are attached to the agricultural sector, with low incomes, massive

illiteracy, traditionalism, and reclusive isolation. These problems of the rural area have not received adequate attention since most development researchers have emphasized the problems of urban centres, while the rural settlements have been neglected.

A difficulty attaching to the study of rural settlements in the Kingdom of Saudi Arabia is the definition of village and hamlets. Generally, all the rural settlements are called villages. Al Kahtani (1988, p333) noticed this when he said, "In Arabic there is no clear definition of the term "village" (quryah), and it is rather loosely applied to any small populated place. This can range from a village down to a single farmhouse, or a nomadic settlement".

Recently, considerable attention has been devoted to the development of rural settlements by the Ministry of Municipal and Rural Affairs. From this, the village, according to the definition of the General Directorate of Rural Affairs of the Ministry of Municipal and Rural Affairs, is any settlement permanently inhabited by a number of people that enjoy the necessary aspects of life and has a special name known to these people. The main occupation of its inhabitants is farming or animal husbandry, fishing, metalwork, or any combination of these different occupations. It should have no less than 100 people and no more than 5,000 persons. The number of houses should not be less than 20 and the population should form a homogeneous unit (Al-Muslim, 1983, p196).

According to the above definition, the rural settlements in the Jizan province are classified into two types, viz: (i) hamlets, ie.

all the rural settlements under 100 persons are hamlets; and (ii) villages, ie. all settlements over 100 to 5,000 inhabitants.

In order to provide ideas for the planning of rural settlements, it is important to examine the nature of settlements in the province. So this chapter intends to provide background knowledge about the traditional rural settlement and the consequent changes in rural settlement patterns at the present time. Factors affecting rural settlement patterns in the province, either traditional or contemporary, will also be discussed.

5.2 Characteristics of Rural Settlements in Jizan Province

The study area is distinguished by three main physiological areas: the plain, the hills, and the mountain areas. The differences in elevation result in strong contrasts in soil, water and vegetation. These factors, acting in combination with economic and cultural factors, have modified population distribution and settlement types (see fig.5.1).

The majority of the population live in rural settlements attached to agricultural activity, while a small proportion of the minority do not have land and they are engaged in trading activities in the towns. This, in fact, reflects the predominantly rural character of the province.

The present analysis of rural settlement patterns is based on three sources:

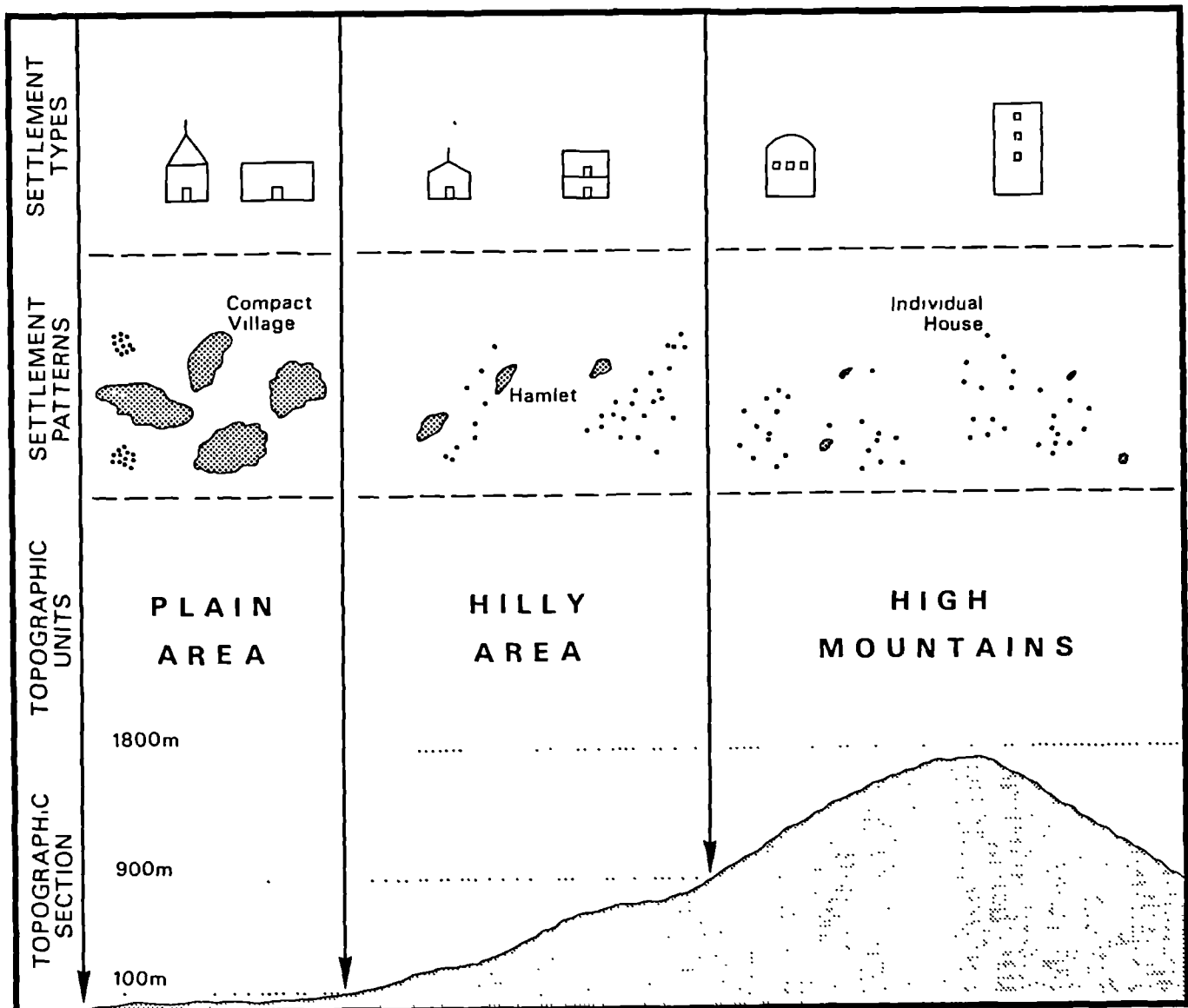


Fig.5.1 A Profile (West-East) of the Province showing the Settlement Types (after Abdulfattah, 1981)

1. Topographical maps of 1:50,000 that cover the province, 1978.
2. Socio-economic survey of villages and Hajar in the Kingdom of Saudi Arabia, Jizan province, 1983.
3. Fieldwork, 1988 and 1989.

According to the 1983 villages and Hajar survey, there were about 927 such rural settlements throughout the province. The rural population was estimated to be 378,081 persons, this figure giving an average of about 408 persons per village.

Table 5.1 Classification of Settlements According to their Population Size in Jizan Province, 1983

Settlement Size	No. of Settlements	%	Cumulative %
less than 100	164	17.7	-
100-499	431	46.5	64.2
500-999	176	19.0	83.2
1000-1499	100	10.8	94.0
over 1500	56	6.0	100
Total	927	100	-

Source: Compiled from 1983 Villages and Hajar Survey, Jizan Province

Moreover, table 5.1, indicates that 17.7 per cent of the total settlements were hamlets with under 100 persons, 46.5 per cent of settlements had between 100 and 500 persons, 19.0 per cent ranged between 500 and 1,000 inhabitants, and only 16.8 per cent of settlements exceeded 1,000 persons. Generally speaking, 64.2 per

cent of settlements had under 500 persons and 35.8 per cent of settlements ad over 500 persons. The following analysis describes the characteristics of settlements in each area of the province.

5.2.1 Settlements in the Plains Areas

This area ranges from the seashore to 100 m above sea level, sloping gently towards the sea. Numerous villages are sited where drainage from the mountain area to the sea has created alluvial material deposited since prehistoric times. Indeed, the availability of water and fertility of soil in this particular area have attracted settlement to be located along the wadi channels. It appears that the most common and typical form of social grouping is the extended family which consists of a number of nuclear families. These families, since a long time ago, have mostly settled together in a neighbourhood in clustered villages. Obviously, owing to the distribution of settlements along the wadi channels where the natural conditions were favourable enough to meet the needs of local population, these are now the most populated and dynamic areas in the province.

Table 5.2 shows that the plains area contains 20 sub-emirates or 56 per cent of the total sub-emirates in the Province. These sub-emirates constitute more than half (55%) of the total settlements and 67 per cent of the total rural population in the whole of the province, with an average of 501 persons per settlement.

Table 5.2 Distribution of Rural Settlements by Sub-Emirates in the Plains Area, 1983

No.	Sub-Emirates	Total Population	No. of Settlements	Average Size per Village
1	Al Ahad	29911	48	623
2	Al Mussam	7887	21	376
3	Al Aliyah	5828	11	530
4	Al Gahmah	3427	14	245
5	Itwad	1535	7	219
6	Farasan	4186	12	349
7	Baish	1986	8	248
8	Al Madaya	7190	16	449
9	Ash Shuqaiq	3282	12	273
10	Dahmad	19061	16	1191
11	Abu Arish	19569	58	337
12	Sametah	32750	46	712
13	Wadi Jizan	16166	29	557
14	At Tuwal	16830	22	765
15	Masliyah	8436	9	937
16	Ad Darb	9837	30	328
17	Sabya	36845	79	466
18	Al Goz	7839	21	373
19	As Shugairi	8391	29	289
20	Dihamah	13452	20	673
	Total	254408	508	501

Source: Compiled from 1983 Villages and Hajar Survey, Jizan Province

Table 5.3 generally classifies the 508 rural settlements in the plains area into five groups according to their population size. The table illustrates that there was a very small per centage (10%) of the total settlements which are hamlets with populations under 100 persons. The high proportion of settlements (64.4% of the total) had between 100 and 1,000 inhabitants, while 25.6 per cent of the total settlements had over 1,000 persons. According to the definition of villages in the country, this area is dominated by the village type (90 per cent of the total rural settlements have over 100 persons).

This, in fact, reveals that the plains area is characterized by large rural settlements. The rural settlements here tend to be compact villages, and uniform throughout the whole area in their having the following characteristics:

1. Rural settlements are close to each other. Each village constitutes by itself or with the neighbouring village a whole economic unit that takes part in building and in agricultural activities in general.
2. Farming is the villager's main activity, though it has recently been much supplanted by the civil service sector that has become the dominant one, particularly among the inland villages of the plain. The population of the coastal villages, however, still practise fishing or stock raising activities.
3. Each village constitutes a social unit. This means that the villagers are usually relatives governed by one man known as the sheikh of the village.
4. Life in the village depends on private ownership, whether of the farm or dwellings. However, there is a very strong element of co-operation among village residents in the systems of irrigation and agricultural activities.
5. Every group of villages has a weekly market for their agricultural and livestock products.

Table 5.3 Classification of Settlements According to their Population Size in the Plains Area, 1983

Settlement Size	No. of Settlements	%	Cumulative %
less than 100	51	10	-
100 - 499	196	38.6	48.6
500 - 999	131	25.8	74.4
1000 - 1499	81	16	90.4
over 1500	49	9.6	100
Total	508	100	-

Source: Compiled from the 1983 Village and Hajar Survey, Jizan Province

Obviously, in the area prone to flooding, where the soil fertility and flood frequency are high, the settlement pattern is marked by highly compact villages, distributed along the valley sides from east to west (see fig.5.2). Moreover, in the plains area, there are seven emirates with more than ten villages with populations of over 500 inhabitants. These are Sabya, Dahmad, Abu Arish, Wadi Jizan, Al Ahad, Sametah and Al Tuwal. They contain ^{59 per cent of} the total settlements in the plains area. These emirates are aligned north to south in the vicinity of major agricultural areas (see fig.4.2, chapter 4).

It is not surprising, therefore, that a close relationship exists between population density and settlement patterns in the province. A comparative study of fig.5.3 and population density (fig.4.17 chapter 4) confirms that the inland area of the plains has a high density of up to 100 persons per sq. km. The average size of village population here varies from about 623 persons per village in

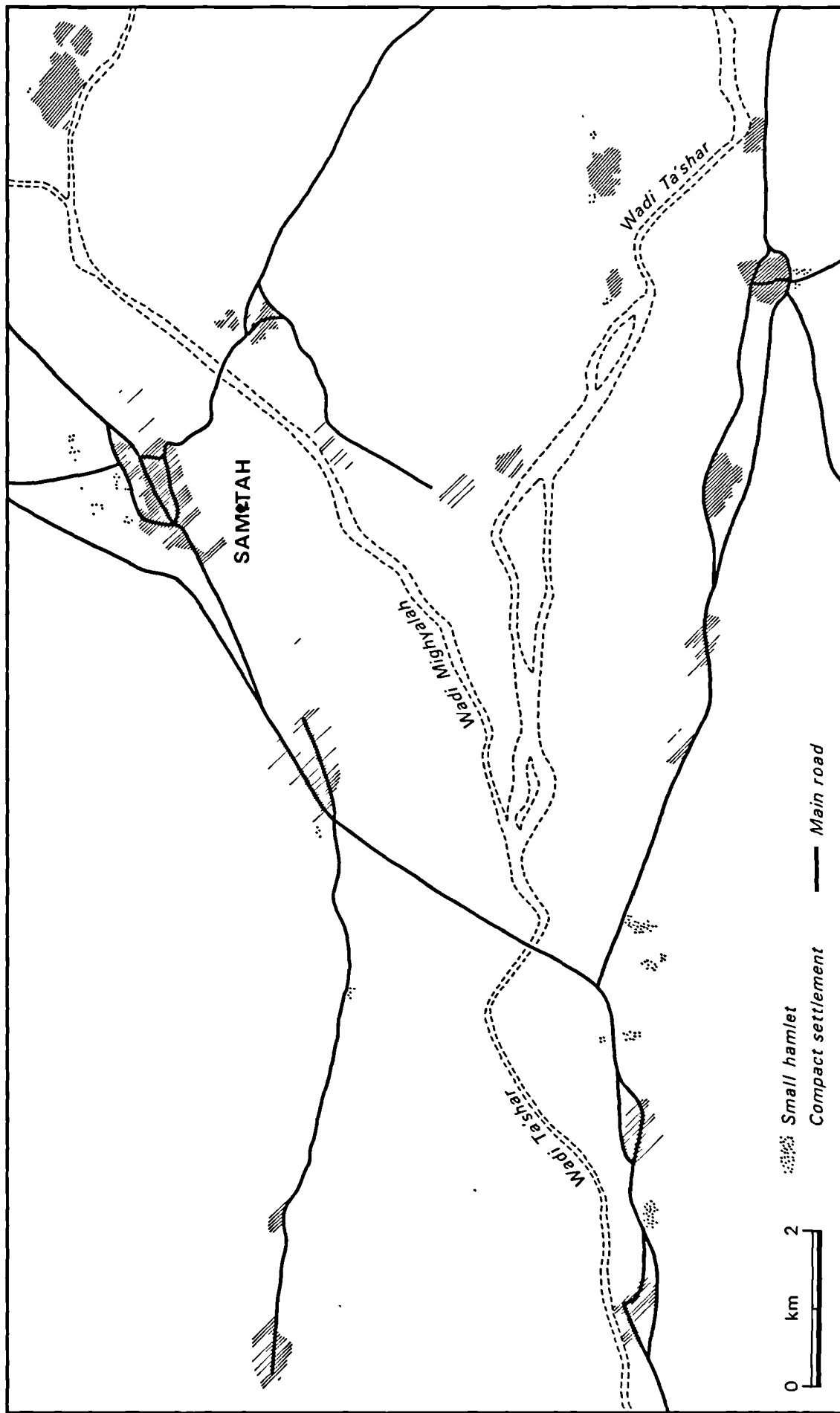


Fig. 5.2 Characteristic Settlement Patterns of the Plains Area

Source: Topographical Map (1:50,000)

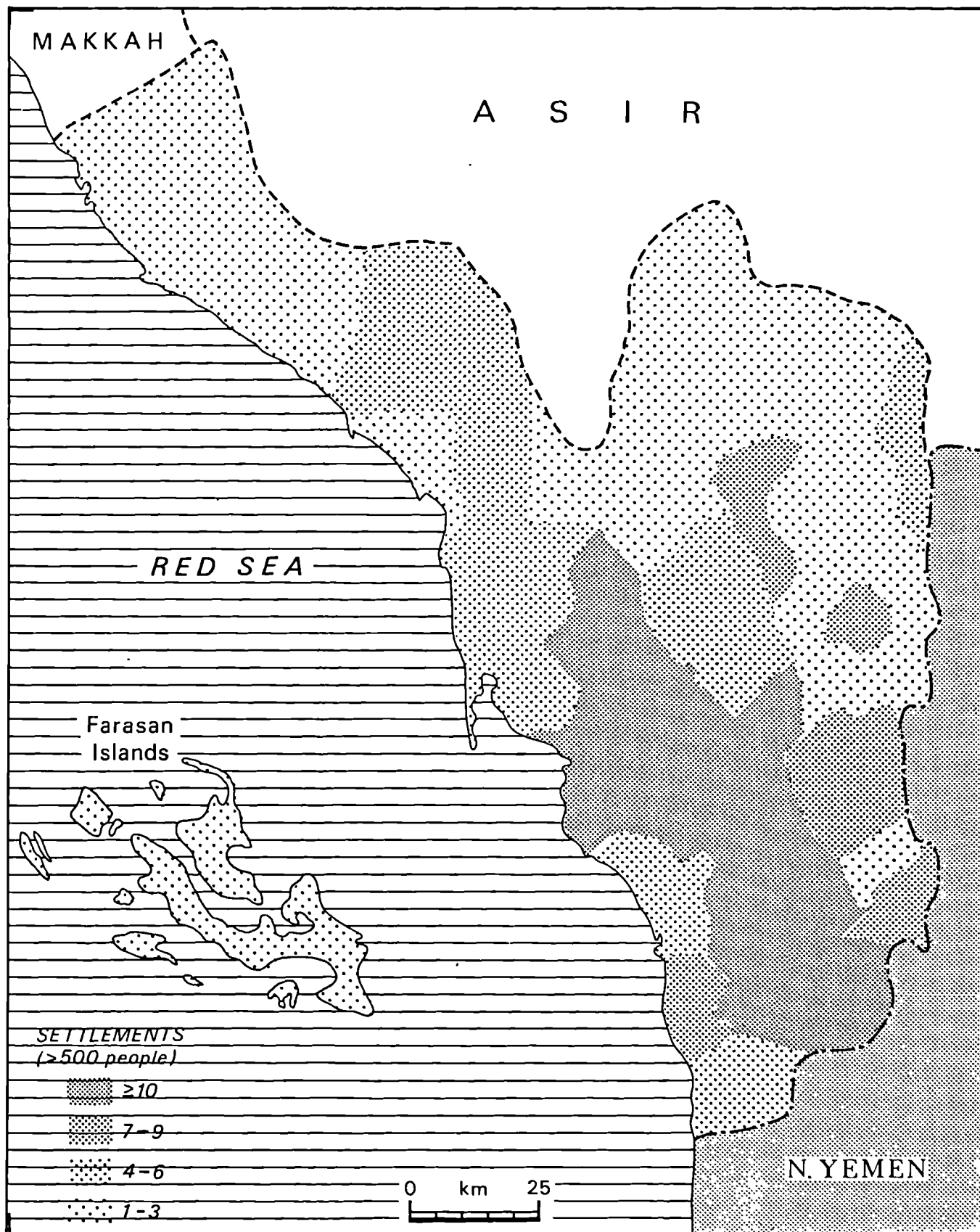


Fig.5.3 Distribution of Settlements (500+) in Jizan Province in 1983

Source: Sogreah, Village Survey, 1983

the emirate of Al Ahad to 1,191 persons per village in the emirate of Dhamad.

Indeed, the high density and the high average population size of villages here are due to two major factors. First, this area has good irrigation facilities provided by frequent flash floods in rich agricultural areas. This has led to intensive cultivation which is also conducive to the concentration of settlements. Second, the area is also well provided with major social and infrastructure services. Thus the settlement pattern here is one of compact settlements, which are common and predominate the settlement types.

It is obvious that this area is distinguished as a dynamic area. The major urban towns (see fig.4.12 chapter 4) - Jizan, Sabya, Abu Arish, Sametah and Baish - are located here where the social and economic activities are concentrated. These urban centres have provided employment to inhabitants of the surrounding villages who travel daily from their villages to these towns where they work. These employment outlets have enabled the rural exodus to be more closely limited in the surrounding rural area than has been the case in other places in the remote rural areas.

Moreover, five of six municipalities in the province are located in this area, ie. Jizan, Sabya, Abu Arish, Sametah, and Baish. In addition, this area is dominated by the cluster village centres which are small municipal departments offering services in public health, refuse collection, maintenance and construction of roads, delivery of building permits, and road cleaning. There are

three centres located at Al Tuwal, Al Ahad and Wadi Jizan. All these have provided their related villages with a certain range of services. Furthermore, most of the villages here are provided with drinking water, more than the mountain and coastal areas which are supplied from wells or by tanker trucks bringing water from a long distance away.

Undoubtedly, the emirates of the inland plains are much better served by asphalted roads than the coastal and mountain areas (see fig.7.6, chapter 7). The major roads from Asir and Al Hijaz provinces pass through the urban centres and several asphalted branch roads have been established on each side. These roads have a major impact on the development of most of the villages, while the remote villages that are not served by roads become relatively unimportant.

Agricultural activity around the towns is concentrated on commercial food crops, particularly vegetable production, for the urban market. Moreover, trade activity has become important in the villages which are located on the major road.

The above factors have resulted to a very remarkable degree in the settling of rural population in this area. Most of the villages have benefited from the public services that are provided by the towns. Thus, the rural population still live in their villages but work in the nearby towns.

In addition to these dynamic and populated areas, there are the areas that belong to the coastal emirates from Al g^hamah in the north

to Al Muwassam in the south. The density here is less than 60 persons per sq.km, and the size of settlements is therefore less than those in the inland part (see fig.5.3). The average size also varies from 300 persons per village in the emirates of Al ^hqamah and Ash Shuqaiq to more than 600 persons per village in the emirate of Dihamah. The separating distance here is also more than in the inland area. This reveals that when the soil fertility and water sources decrease, the size of settlements also registers a decline to within certain limits. Moreover, this area is isolated and has not benefited from roads and public services as shown in inland areas. Most of the rural population here depend on fishing with low income and poor houses.

Until recently, the type of housing in the plains area represented one of the most characteristic features of the environment. The raw materials offered by the local environment, mainly acacia and tamarisk trees, are the most important factor that has shaped the houses. Hut dwellings (see fig.5.1), which were the most common in rural settlements may possibly originate from Africa. They were built from tree branches with two openings in large houses that allowed for air circulation, since there was no electricity to power modern air-conditioning machinery. The internal layer was insulated by earth and plaster, whereas the front yard was paved and used as a sitting place in the evening and for sleeping in the summer. Most of the daily activity was done outside the hut within the house wall where the kitchen and bathroom were built.

Villages in the plains area are usually located some distance

from the road and the centre is marked by the mosque, which has an extensive role, being at the same time a place of worship, a place of learning and a meeting place in the village for the local community members. Adjacent to the mosque are the few shops and the market place, if any.

The centre of the village is surrounded by family clusters, with the patriarch's house in the middle of the dwellings of his family and relatives, which are generally huts with enclosures. Until recent times in the traditional rural village, generally formed of huts, there were no public buildings aside from the mosque and most of the public functions, such as administration of justice, tax collection, public announcements and arbitration, were carried out during the weekly market day at the nearest rural centre.

5.2.2 Settlements in the Hilly Area

Hilly land comprises the area between the plain and mountain areas. It ranges from 100 to 900 m above sea level. The topography of this area is one of a steeply sloping hilly terrain interspersed with numerous valleys. The soil of the area is distinguished by low fertility with limited agricultural potential and few possibilities of irrigation. Vast expanses of the area are devoted to pastoral land for sheep and goat rearing.

Table 5.4 shows that this area contains 8 (or 22 per cent) of the total sub-emirates, 20 per cent of the total rural population, and 34 per cent of the total rural settlements of the whole of the

province. The average size of rural settlements in this area is approximately 242 persons per settlement.

Table 5.4 Distribution of Rural Settlements by Sub Emirates in the Hilly Area, 1983

No.	Sub-Emirates	Total of Population	No. of Settlements	Average Size of Villages
1.	Al Khawbah	13135	33	398
2.	Al Haqu	3980	16	249
3.	Iban	10152	57	178
4.	Al Aridah	22926	100	229
5.	Harub	9094	24	379
6.	Al Kudmi	8347	38	220
7.	As̄salb	3225	13	248
8.	Al Humirah	6069	37	164
Total		76928	318	242

Source: Compiled from 1983 Villages and Hajar Survey, Jizan Province

The population density in this area varies from less than 30 persons per sq. km in the sub-emirate of Al Haqu, Al Humirah and Al Kudmi, to less than 60 persons per sq. km in the sub-emirates of Al Aridah, Harub and Al Khawbah, where fertile soil and water are available for agriculture. These emirates are the most populated places in the hilly area. They contain 72 per cent of the total rural population, and 67 per cent of the total rural settlements in this area. Moreover, as fig.5.3 shows, these emirates had between 7 and 9 villages with populations of over 500 inhabitants. This in

fact reflects the fact that the semi-compact settlements are found with an average size ranging from 230 persons per village in the sub-emirate of Al Aridah, to 379 persons in the sub-emirate of Harub, and 398 persons per village in the sub-emirate of Al Khawbah.

Table 5.5 classifies the rural settlements in the hilly area into 32.3 per cent of the total settlements with hamlets containing under 100 persons. The high proportion of settlements (62 per cent) contain between 100 and 1000 inhabitants. A small number of settlements (5.3 per cent) exceed the above size, that means over 1000 persons. Moreover, the table shows that the settlement types here are small in size compared with those found in the plains area. 85.3 per cent of the total settlements here have less than 500 persons, because large tracts of land are not capable of supporting a dense population. In addition, this area is isolated from dynamic urban towns in the plains area.

It is obvious that this area is an intermediate type of settlement, situated between the plains area, which is distinguished by concentration of population and compact settlements, and the mountain area distinguished by dispersion of settlement. The fundamental characteristic of the settlement here is that it is neither agglomerated or dispersed (see fig.5.4).

The housing here is a mixture of traditional huts and small stone and mortar houses. The size of the huts here is smaller than that in the plains settlement and they are very common in the areas that are close to plains lands. The stone houses are distributed in

Table 5.5 Classification of Settlements according to their Population Size in the Hilly Area, 1983

Settlement Size	No. of Settlements	%	Cumulative %
less than 10	103	32.3	-
100 - 499	168	53	85.3
500 - 999	30	9.4	94.7
1000 - 1499	14	4.4	99.1
over 1500	3	0.9	100
Total	318	100	-

Source: Compiled from the 1983 Village and Hajar Survey, Jizan Province

the high land that is close to high mountain areas(see fig.5.1). These houses are distinguished by two storeys, the first room being used as a store for animal fodder and the second as a dwelling place. Hamlets and houses are closely linked to each other by footpaths.

Overall, it can be observed that this area is changing at a very slow rate. The majority of dwellings are old and the modern housing estate projects like those in the plains area are very rare. Paradoxically, this area, as indicated by the villages survey in 1983, has not been significantly affected by the migration of the rural population. Such migration concerns rather more dynamic neighbouring areas where the population has benefited from proper schooling at an earlier stage, thereby giving the rising generation easier access to public service jobs (Sogreah, 1983).

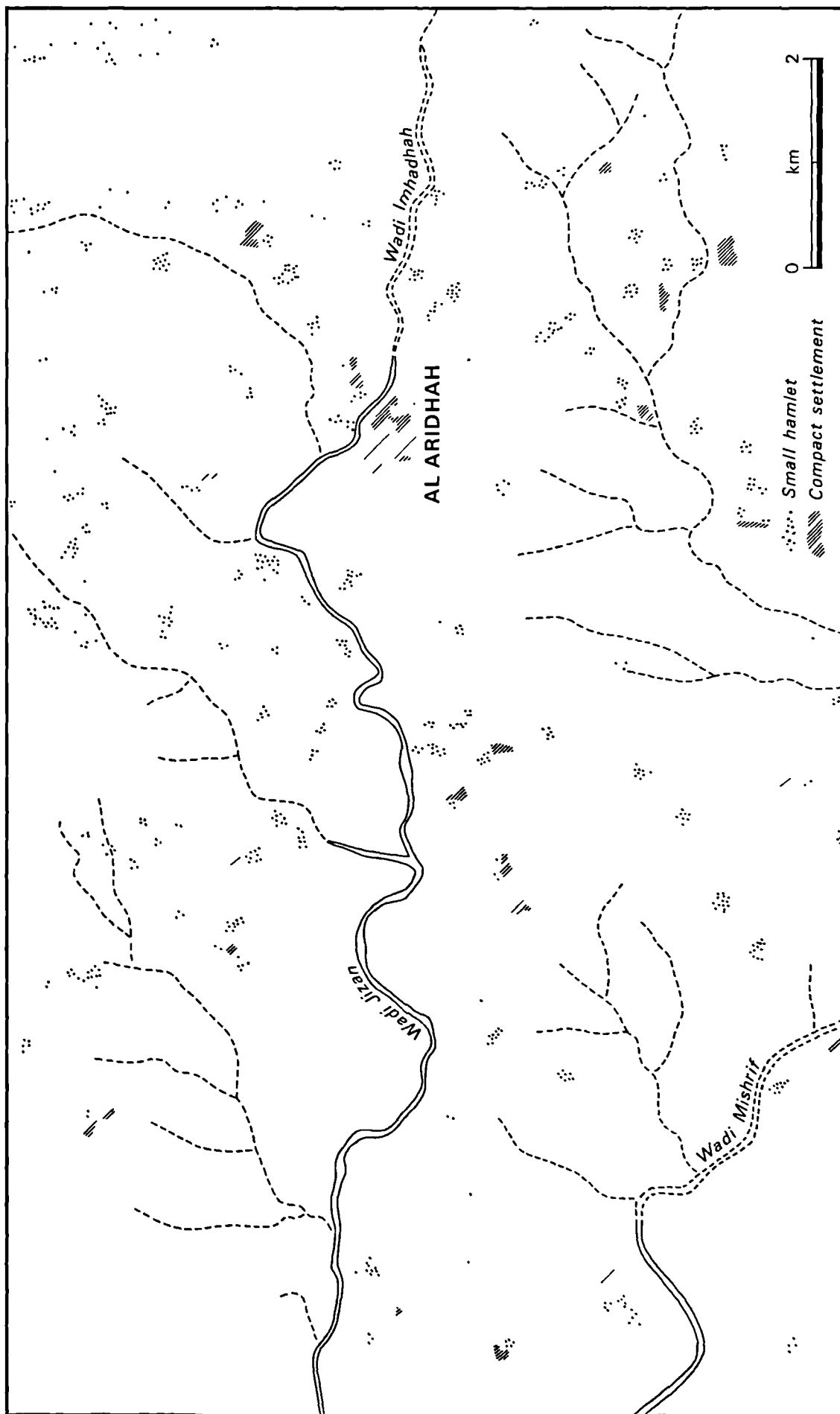


Fig. 5.4 Characteristic Settlement Patterns of the Hilly Area

Source: Topographical Map (1:50,000)

5.2.3 Settlement in the High Mountain Area

This area is higher than 900 m above sea level. The landscape is rugged and mountainous, with steep-sided valleys. Serious erosion is responsible for the fact that this area has hardly formed any soil. In certain places the population has constructed terraces in many scattered small gardens with steep slopes, or they have built flat steps in the hillside. Moreover, this area is characterized by considerable communication difficulties, especially during the rainy seasons when floods can easily isolate entire massifs.

Table 5.6 illustrates that this area covers 8 (or 22 per cent) of the total sub-emirates, 12 per cent of the total rural population, and 11 per cent of the total rural settlements in the whole of the province. The average population of rural settlements is 468 persons per group of houses. The density of this area is generally less than 30 persons per sq.km except in the sub-emirates of Ad Dyer (which has 45 persons per sq. km) and Fayfa (with 118 persons per sq. km). The high density in these sub-emirates is due to the sufficient soil and water which have encouraged the population to obtain level fields. Moreover, these areas have attracted special government interest and benefits, among other things by establishing public services and good tracks. This has, in fact, attracted many rural populations to settle here in order to benefit from the development services. These two emirates contain 59 per cent of the total rural population and 57 per cent of the total rural settlements in the area. Fig.5.3 shows that the emirate of Fayfa is the only sub-emirate here that contains more than ten villages with populations of over 500 persons.

It is obvious that the average size of settlement in the high mountain area varies from 124 persons per group of houses in the sub-emirate of Qais to 739 persons in the sub-emirate of Fayfa.

Table 5.6 Distribution of Rural Settlements by Sub-Emirates in the High Mountain Area, 1983

No.	Sub-Emirates	Total of Population	No. of Settlements	Average Size of Villages
1.	Ad Dyer	10741	35	307
2.	Al Hashr	2415	5	483
3.	Ar Rith	4035	12	336
4.	Ar Rabuah	5441	8	680
5.	Qais	622	5	124
6.	Al Zaydan	2150	5	430
7.	Fayfa	17004	23	739
8.	Munjed	4820	8	603
Total		47228	101	468

Source: Compiled from 1983 Villages and Hajar Survey, Jizan Province

The rural settlements in the area can be classified on the basis of their size as shown in table 5.7, 17 per cent of the total settlements are hamlets with under 100 persons per group of houses, 56 per cent of the total settlements have between 100 and 500 persons, 16 per cent of settlements range between 500 and 1000 persons, while the number that exceed 1000 persons is very few, in fact only 11 per cent of the total settlements. The table also

indicates that this area is distinguished by the small size of settlements, as 73 per cent of the total settlements have less than 500 inhabitants.

Table 5.7 Classification of Rural Settlements according to their Population Size in the High Mountains Area, 1983

Settlement Size	No of Settlements	%	Cumulative %
less than 100	17	16.8	-
100 - 499	57	56.4	73.2
500 - 999	16	15.8	89
1000 - 1499	7	7.0	96
over 1500	4	4.0	100
Total	101	100	-

Source: Compiled from the 1983 Village and Hajar Survey, Jizan Province

Settlements in the mountains (as shown in fig.5.5) are marked by the presence of a complete dispersion of houses from each other, for the rugged topography of the area creates patch agricultural fields for one family. The dispersion of agricultural terraces has resulted in a remarkable degree in the sprinkling of houses, which has led to social isolation and increased privacy.

The old dwellings are normally located on top of a rock or on elevated land for defence. They have narrow windows and the ceilings are relatively low. These dwellings are characterized by roundness of form, which makes them resemble old castles and towers. They are

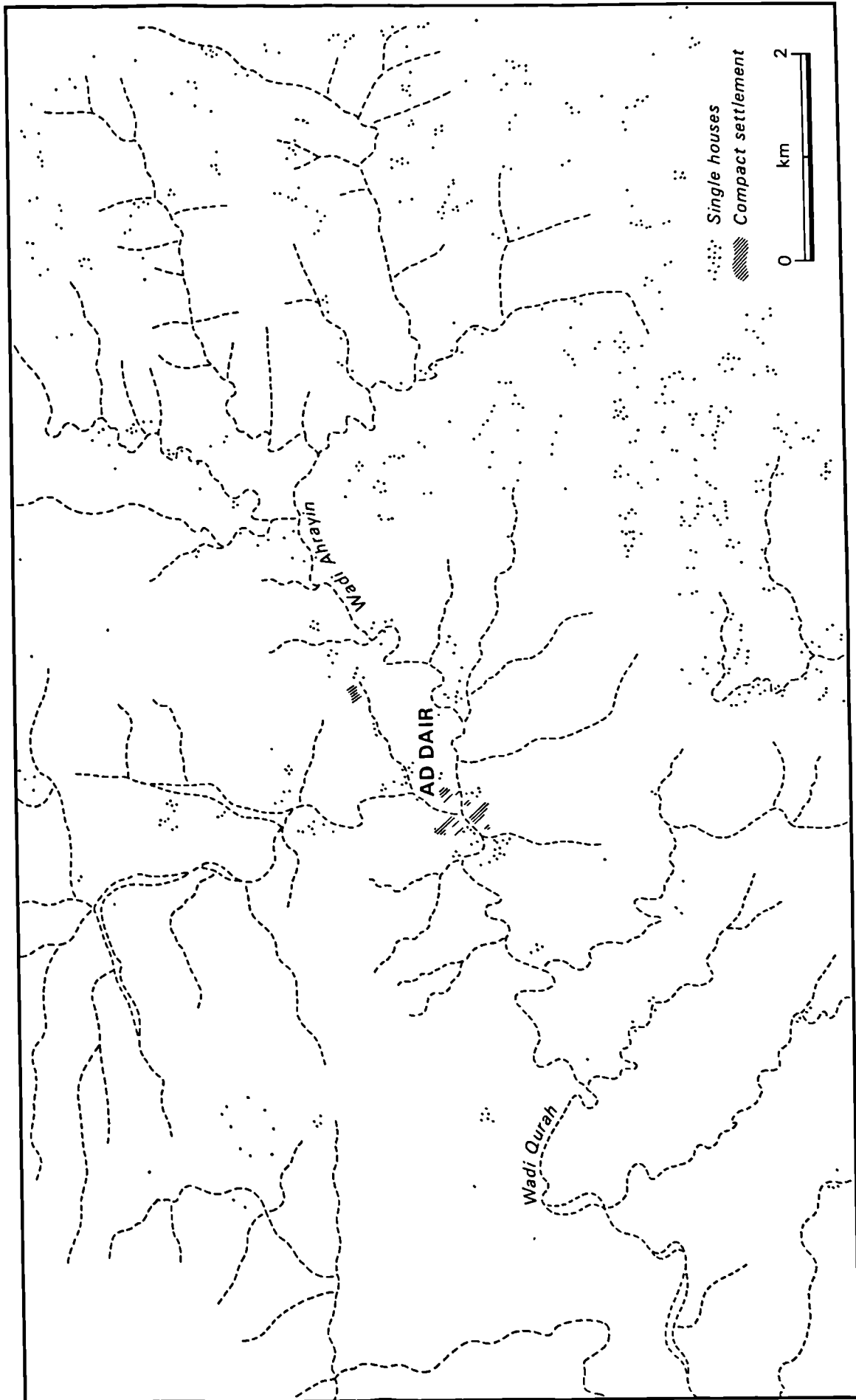


Fig. 5.5 Characteristic Settlement Patterns of the High Mountains

Area Source: Topographical Map (1:50,000)

built from stone and roofed with juniper wood (see fig.5.1).

It is obvious that certain area, eg. Fayfa, has benefited from the development process, among other things, by the laying of good tracks, while facilitating the development of this area. These tracks have also promoted a high level of emigration of the rural population accompanied in return by new housing projects (Sogreah, 1983).

From the above discussion, it is clear that there is a variation in the size of settlements between the plains area on the one hand and the hilly and mountain areas on the other. The plains area has a large size of settlements, with high density, while the hilly and mountain areas are characterized by a high proportion of small sized settlements. In addition, as fig.5.1 demonstrates, the settlements in the province can be classified into three types, viz: compact settlements in the plains area, semi-compact settlements in the hilly area, and dispersed or individual houses in the high mountain area.

All this variation is a direct result of physical and economic factors, and the spatial distribution of development in general.

5.3 General Changes in the Pattern of Rural Settlement in the Province

Despite the slow transition of the province, it is important to note that the distribution of development benefits in the province has led to some progress in modernization in certain areas. These

samples of modernization, which have introduced some modern innovations, have resulted in the old style of life appearing directly alongside the new style of living in the province. Certain rural settlements have therefore been affected by modernization which has triggered a process of urbanization in many settlements where a transformation has begun from the traditional rural life.

Moreover, the development of communications in recent times has further influenced rural settlement patterns. The new interest in modern transport has expanded the settlement pattern by encouraging people from the far villages to migrate to the settlements that are served by roads.

In addition, the village cluster centres designed to distribute development benefits to rural populations and to narrow the gap between urban and rural living, have also influenced the pattern of rural settlements. It appears that the villages of the centres take priority in benefiting from the village cluster services over the remote villages. These benefits may take the form of certain special schemes, such as the planting of public gardens or the installation of street lighting.

From the above discussion, we can see that there are a series of factors in the development process which have influenced the settlement patterns in the province. The following analysis seeks to describe the effect of these elements on the different parts of the province.

In the plains area, it is observable that the middle region of the plain is more fortunate than any other part of the province. The rural area is organized into a large number of densely structured villages surrounded by cultivated land, with groups of villages being linked to large agricultural towns where the weekly market is generally held. This area, more than any other in the province, has witnessed a rapid transition process in settlement patterns, moving towards modern urbanization. This change is taking place under the influence of the following principal factors.

1. Most of the development departments of municipalities and cluster villages centres are located in this area, aligned from north to south in the middle of the plain.
2. The major urban centres are located here and are connected by major roads. These centres provide services for the surrounding areas, which makes them more attractive than the remote rural areas.
3. This area is provided with good transport facilities, containing both the international road to the Yemen, which plays an important role in settlement expansion, and the local roads which facilitate visits to the larger towns for trade activities and contacts that have contributed to maintaining a significant level of agricultural activities, with market outlets being found for new cash crops, such as appear in all the middle plains emirates of Baish, Sabya, Dahmad, Abu Arish, Sameta, and Al Tuwal.

The rural settlements in this particular area have in turn benefited from the municipalities, village cluster centres, and opportunities in government employment, whilst service openings are concentrated in this area. This has led to a situation where most of the rural population are employed in neighbouring towns but still live in their villages. Rural settlements grow rapidly, due to their proximity to urban centres. These new opportunities have enabled the rural population to benefit much more easily from credit offered by the Saudi Real Estate Development Fund. Similarly, municipalities and village cluster centres have obtained credit notably for the construction of housing estates for which approval has been readily granted.

The settlement type has been changed from traditional hut housing to new concrete houses. Consequently, there is a trend towards more solid building in old villages where concrete houses are rapidly replacing timber-framed houses, while at the same time developers are respecting the layout of traditional enclosures. The streets have been formed by following the old twists and turns between property boundaries, which are today made of concrete blocks. Within these property boundaries, modern and mortar-built houses are being built next to old huts which are gradually being abandoned.

However, settlement here lacks forward planning, because the trend of new houses is to perpetuate the old structure of the village which is being rebuilt according to an identical plan. This old plan does not meet the new requirements of vehicular traffic. On the other hand, on the outskirts of the villages, new public facilities

and housing promote the construction of new dwellings that are easily accessible by cars.

It is obvious that in large villages where the trading and weekly markets take place, settlements grow rapidly as a result of these trading and service activities. Rural populations have migrated from small villages and become attached to trading work. Along the roads leading to the centres of town or village markets, new settlements have been established with trading activities. New houses have also appeared on the perimeters of towns where plots of land are not directly served by asphalted roads. These houses have arisen in consequence of the Real Estate Fund that has been made available to town and large village populations. Thereby the rural population have been encouraged to settle in the large settlements in order to benefit from the loans.

Generally speaking, the middle area of the plains, from the emirate of Baish in the north to the emirate of Al Tuwal in the south, has benefited from the development processes which have introduced to the area a rapid tendency towards modernization. This modernization has in turn triggered off a vast process of urbanization, more than appears anywhere else in the rest of the province. On the other hand, the coastal area of the plain is still a backward area. The alignment of the new road networks and social services have not until now benefited this area, with the result that there is increased stagnation and decline. In fact, whereas this area was in former times traversed by the road link to Yemen, today it is fairly isolated from cross-exchange currents. The population

here exist by traditional poor fishing work and sparse rain-fed agriculture on sandy, saline soils. The very limited agricultural income and shortage of social services have led to considerable migration of the rural population and eventual abandonment of certain hamlets.

The type of settlement here still includes the traditional houses with huts in most of the coastal villages, although certain areas that are close to the middle plains area have benefited from the development process which appears in the new type of housing.

Generally speaking, this area is in fact isolated from the more dynamic areas. The population here live in poor conditions with inadequate social and infrastructure services such as water, electricity, and metaled roads.

The hilly area, which is characterized by pastoralism, remains a backward area in terms of the provision of social and infrastructural benefits. However, it is observable that some new settlements have been established. The reason for this is the motorization of the semi-bedouin as they have purchased "pick-ups" and mobile water-tankers have enabled them to be less dependent on local water resources than they were in the past. Now water is brought to the animals. In the same vein, the government barley subsidy has enabled important feed supplements to be given to the livestock.

Moreover, the possibilities offered by new equipment, such as

bulldozers, have enabled some farms to change from pastoral to arable farming, notably in the valley beds close to the plains area. It is worth remarking that this land development is in marked contrast to the abandonment of the land by many farmers.

All this has resulted in a very remarkable degree of sedentarization of the bedouin. This settling down often takes on a very discrete form with huts made of recovered timber and sheet metal, animal shelters made out of branches and similar constructions for kitchens, etc. This area is in fact isolated from the more dynamic area, and therefore changes at a very slow rate.

Finally, the rural settlements in the high mountain area are distinguished by the movement of the rural population from harsh physical environments to an easier life in the lowlands. The analysis of the settlement patterns in this area, as already indicated, reflects a dispersion of houses with decentralized local organization. This choice is associated with limited cultivable land with self-sufficient units which have led to diffuse scattering of houses at some distance from each other. In this area, as a result of the physical environment, meetings and markets have been centred on crests of the rises where the shiekh holds audience.

Since the onset of development plans in the province, a transition has come about in this area favouring the locating of new facilities in the lowlands. Many factors have contributed to this transition. Gleave (1966), in his study on "Hill Settlements and their Abandonment in Tropical Africa", mentioned three groups of

interacting factors which were largely responsible for the abandonment of hill settlements. The first group of factors he called push factors, which related to the uplands, while the second group of factors he called pull factors, which related to the lowlands, and finally there was also the factor of government actions.

These same factors are also responsible for the movement of some rural populations from the high mountain area to the lowlands of Jizan Province. The following table illustrates the factors which have contributed to a favouring of the lowlands.

Table 5.8 Factors of Change from Highland to Lowland in Jizan Province

Push in the Highlands	Pull in the Lowlands
Limitations of land	Vigorous competition for the best land
Shortage of houses and building materials	New materials are available for modern houses
Insecurity of self-sufficiency	Importation of new goods
Difficulty of access by car	Good road links
No opportunities for work	Good work opportunities
—	Government policy

The massif of the mountain area is characterized by poverty of agricultural land on account of the harsh environment. The agricultural land is distinguished by cultivated patches according to the availability of soil and water resources. Moreover, properties

are generally small, only supporting individual households on a self-sufficiency basis. The pressure through the growth of population on these limited land resources with low agricultural yield has led to an increasing rural movement either to the lowland area or to urban centres outside the area. The area is also isolated by the difficulty of transportation, particularly in the rainy season, which makes it a difficult area for living. All these push factors are closely associated with counterbalancing pull factors in the lowlands where many new opportunities are available. These possibilities have been supported by a deliberate government policy of reducing dependence on the mountain massif.

The government's provision of social and infrastructural services has focussed development on new construction projects. For example, the municipality of Fayfa and other government services have been installed in the lowlands. These services have attracted many trading activities to the lowlands. Another example is the Bani Malik emirate which has been relocated on much lower land at Al-Dyer. In fact, the Bani Malik massif had three small weekly markets all at different locations, but today these are agglomerated into a single market near the emirate, with easy access to major settlements in the province. In reality, the above factors have led to a gradual abandonment of cultivated terraces. According to Sogreah village survey in 1983, more than one-third of the terraces in the emirate of Ad Dyer have been abandoned.

Obviously, rural population change in this area is characterized by the following noticeable features:

1. People are engaged in government posts or trading activities.
2. The pattern of settlement has become nucleated rather than composed of individual houses.
3. Modern houses are built with block and concrete and they are provided with services such as electricity, water supply, schools, and roads.

This has in fact characterized the process of urbanization as seen in the Fayfa and Al Dyer towns. The rural population who are still attached to their mountain area, particularly older people, must travel down to the lowlands to meet their economic requirements and to benefit from public services. This travel may lead to complete resettlements in a short time, particularly with the strong effect of pull factors.

5.4 Factors Affecting the Settlement Pattern in Jizan Province

The analysis of the settlement pattern of Jizan province reveals that the spatial pattern of settlement is a product of various factors. Some of these factors are the influences of the physical, cultural, and economic environment. These factors have been associated with the creating of a settlement pattern and they have played a major role in the predominating older type of settlement. Now, however, the settlement pattern has begun to achieve greater breadth. This is on account of the impact of the development process characterized by contemporary socio-economic

factors which now affect the predominating structure of modern rural settlements.

The history of settlement patterns in the province indicates the strongest role of agricultural practices and cultural influences as the main factors responsible for selection of the sites and the settlement distribution. Agricultural land use is associated with the physical environment, which in turn has a direct or indirect impact on the spatial arrangement of settlements. This has already been demonstrated at the beginning of this section. However, since the onset of development plans in the province, settlement patterns have changed and indeed are still undergoing change. It is therefore important to note some of the factors that are affecting settlement patterns in the province.

5.4.1 Physical Factors

Physical factors such as the quality of soil, gentle or difficult relief, and the availability of water resources, are compatible with scattered or clustered types of settlement. Vidal de la Blache (1926, p316) commented on this:

the scattered manner of grouping suits localities where as a result of the dissection of relief, soil and hydrography, the arable land is itself divided up. The clustered village is indigenous, on the other hand, in districts where the arable area is continuous, admitting of uniform and extensive exploitation.

The difference of physical environment between the plains and the mountain areas has both a direct and an indirect impact on the

settlement patterns of Jizan Province. The plains area is characterized by uniformity of relief, fertility of soil, and frequency of flooding. These factors, coupled with a rapidly growing population, with a high density of up to more than 100 persons per sq. km. in the middle area of the plains, have led to the concentration of settlements with an average size of up to 1,190 persons per village. Compact settlements are common and predominate as the settlement pattern in this area.

On the other hand, dispersed and individual settlements are associated with broken relief and the limited soil resources which are characteristic of the mountain area. Population density here and the size of villages are less than those in the plains area, because of the difficulty of environment which has led to isolated houses and style of life.

5.4.2 Agriculture

Agglomerated rural settlements with permanent homesteads are associated with agricultural systems, because the economic conditions of paddy cultivation play a major role in encouraging nucleated settlements.

The plains area is distinguished by intensive cultivation of land which is conducive to the concentration of settlements. The agricultural system requires a large labour force for irrigation and harvesting, so that all the farmers and the associated agricultural labourers tend to reside in the same place, creating compact

villages. The plains area is characterized as the most flourishing agricultural area and most of the settlements are agricultural. Sorghum and millet are the staple crops of this area, particularly in the middle part of the plains where the compact village is the rule.

On the other hand, in the mountain area where the form of agriculture may be described as a kitchen garden, dispersed settlements are the rule. Moreover, the pastoral terrain in this area and the dispersion of settlements have also been associated with cattle-rearing in this area.

5.4.3 Cultural Factors

Cultural factors refer to the attitudes and aims of rural populations in terms of their economic and social organization.

Bunce (1982, p95) mentioned that:

cultural influences play perhaps the strongest role. The way in which society is organised, its ideas, its objectives and its traditions determine the forms of settlement organization and the systems of land division. This occurs both in institutional and individual decisions.

Since time immemorial, the inhabitants of Jizan Province have been characterized by a strong tribal attachment. Historical circumstances have made it imperative for the people to form distinct social entities. For example, during historical times the need of defence was an important force in conglomerating tribal peoples into definite groups in one place where they could defend themselves from other tribes. Social relationships and co-operation amongst the

tribal people have also played a large role in the concentration of houses. For example, the system of agriculture requires co-operation among the tribes under the rule of a leader. This means that each village is responsible for its use of the irrigation system and has rights to its use under the decision of the head of the village or the shiekh. Moreover, the social occasions and events celebrated among blood relations have also tended to group tribal peoples into compact settlements.

The mosque also, usually constructed in the central part of the village, plays an important role in the settlement patterns of villages, since it is the centre for worship and other community activities.

In the high mountain areas, the cultural factor appears in the construction of houses which have been built for protection and are located on the crest of rocks in the form of castles and towers.

5.4.4 Markets

The most important event distinguishing Jizan Province is the existence of the weekly markets held in the largest villages and towns. These markets play an important role in attracting the rural population over a wide area. Recently, these markets have been reinforced by new development factors, including the importance attached to new goods. This has, in fact, led to the growth of these centres by expansion of trading activities. Moreover, these market places have attracted government administration and many social and

infrastructural services. This modernization process has transformed many market places into urban centres with daily markets, particularly those located on major roads.

5.4.5 Government Administration

The administrative factor plays an important role in influencing the development of settlement patterns. This influence appears not only in the growth of the traditional weekly markets and small towns, but also in the attraction felt by the dispersed rural population, who live in mountain fastnesses, to migrate to the lowlands in order to benefit from development services.

Prior to this growth in local administration, Jizan town, Sabya, Abu Arish and Sametah were the only centres affected by the administrative structure. Jizan town acted as the capital of the province, while the other towns were sub-districts. In 1974, the number of administrative centres increased to 29 emirates in the province. This number was increased by dividing some of these emirates, thus bringing to 36 the total number of local emirates.

Indeed, this organization has largely contributed to the growth of towns designated as centres for emirates.

The impact of the administrative factors can be observed in three major aspects:

1. On the weekly markets in settlements. All the weekly market-

places that have been chosen for administrative centres are provided with social and infrastructural services, such as electricity, schools, water supply, police, and roads. Moreover, trading activities have also expanded in these places. So, all these services have led to a rapid growth in the spatial pattern of settlements.

2. In the developing of small towns which are not market towns but have been chosen as emirate centres. These centres have been provided with services and have been connected with urban centres by roads. This has led to a further expansion of settlement patterns, with population movement into such towns as Al Tuwal, Wadi Jizan, Al Madhaya, and Al Aliyah.
3. In encouraging mountain dwellers to forsake their difficult environment and come down to the lowlands. This has been done by establishing the development projects close to emirate centres as in the Fayfa and Ad Dyer emirates.

Indeed, the administrative factor has had a very major impact either directly or indirectly on the development settlement patterns in the province.

5.4.6 Roads

Another factor in the present evaluation taking place in the province is the influence of surfaced roads in determining the importance of villages. Those villages which are not served by the

roads have become relatively important. This is even more true specifically of the weekly markets. Those sited by surfaced roads, or better still at cross-roads, have become very important and more dynamic. A comparative study of road density (see fig.7.5, chapter 7) and the size of the rural settlements (see fig.5.3 in this chapter) shows that the emirates of the middle part of the plains area not only have a high density of road networks, but also that they have the highest density of rural population, as well as the largest size of rural settlements. It is obvious that along the major road in the middle plains area, many settlements have been growing rapidly, due to their location along that road (see fig.4.12, chapter 4). Baish, Sabya, Abu Arish, and Sametah towns are all located on the major road to Yemen and those centres have witnessed a very rapid growth (see chapter 9). Their weekly markets have become daily markets, their populations have increased from 39,938 persons in 1974 to approximately 100,000 persons in 1989, and they act as major urban centres in the province.

On the other hand, the small towns on this road have also grown rapidly. For example, Ad Darb in the northern part of the province, Dhamad in the middle of the plains, and Al Ahad and Al Tuwal in the southern part of the province have all come under the influence of the major road. In 1974 they had 10,800 persons, but this number increased to about 23,000 persons by 1989. This was due to their location which has led to their growth as market towns.

The impact of roads is not related solely to towns and market-places, but it also includes the villages that are served by the

roads. All villages situated on the nodal points, particularly at road junctions, have experienced rapid growth (see fig.4.12, chapter 4). For example, the village of Al Thabiah at the junction of three major towns (Jizan, Sabya, and Abu Arish) has witnessed a high rate of growth. In 1974, it was a small hamlet, but in 1989 it had more than 4252 persons, with brisk trading activities at the junction. Al Karbus is another example situated as it is on the cross-roads of Jizan town, Abu Arish, and Sametah. It has benefited from its location as an important place for importation of new goods that are needed in these three towns. The estimate of its population was about 2,000 persons in 1989.

By the same token we find that Al Dagarir village, located at the cross-roads of routes between Al Ahad, Sametah, and Al Khawbah, is growing considerably more than other nearby villages. It was a small hamlet in 1974 with a population of about 800 inhabitants, but in 1989 its population had increased to approximately 2,500.

Indeed, the settlements on these roads have benefited from their location more than have remote settlements. Naturally, in such places, vehicle maintenance stations and restaurants have been opened. Many spare-part shops have also been started in addition to small markets that supply the local inhabitants with their daily needs such as meats, fish, and bread.

Moreover, the rapid developments of these centres has attracted public services and trading activities which in turn have encouraged the inhabitants of distant villages to come and live near to the road

with trading facilities. Furthermore, the growth of these centres has begun to show semi-industrial activities related to construction materials, concrete block manufacture, as well as iron works whose products are demanded by the rural population. These activities have become established along the roadside near to these centres.

5.4.7 Service Factors

The growth of settlements in the province has kept pace with the distribution of social services, schools, electricity and water supply, which have been important factors in encouraging remote rural populations in small villages and hamlets not provided with these services, to move to the larger villages that do have them. The middle plains area, where most of the social services are available, has witnessed in the settlement pattern of villages, a greater growth than has been seen in the rest of the province. Most of the rural population who have come to live in these villages have come for the sake of the benefits of social services. This is most apparent in the settlement in the areas from Baish in the north to Al Tuwal in the south, where the population density and the size of village populations are higher than in other areas.

Moreover, the Property Development Fund, which has provided citizens with loans for building houses, has added another influence to the settlement patterns. Again we observe that it is the middle plains area where new houses and buildings appear more than in the coastal or mountain areas.

5.5 Conclusions

The various types of settlements in the province, from compact settlements in the plains area to semi-compact and dispersed settlements in the mountain area, are the product of different factor, either socio-economic or physical.

The trend of development in the province has benefited the middle part of the plains area where the population is gathered in compact settlements in the richest agricultural areas. It is here that new services have been introduced. In this area the modernization process has rapidly transformed many settlements which have reached an extensive level of urbanization.

On the other hand, however, the coastal and mountain areas are isolated, and people live under archaic conditions, without access to the facilities of the dynamic area. Settlements here still reflect the old type, devoid of social and infrastructural services.

Future development in Jizan province should integrate the plains area with the mountain area by opening the door for the isolated area to gain easy access to the dynamic areas. This objective can be achieved by developing small towns with which the majority of rural populations have contact.

Chapter 6

Characteristics and Problems of the Indigenous Economy of Jizan Province

6.1 Introduction

This chapter attempts to review the basic economy of the agriculture and manufacturing industrial sectors in Jizan province with particular attention being given to agriculture which is the universal and most important sector. Agriculture is the foundation of the economy of Jizan province, and has a high potential in terms of natural and human resources. Physical conditions divide the province into two broad areas in terms of agricultural production and productivity.

The first is the mountain area where the annual rainfall reaches 600 mm. Hence, farming flourishes on the mountain terraces, particularly around Fayfa, Ad Dyer, Al Aridah, Iban and Al Khawbah, where crops and fruit can be grown. Secondly, there is the plains area with its enormous agricultural potential, due to the very fertile soil and flood irrigation.

The 1981/82 agricultural census showed that there were 35,332 holdings in the province with a total of 303,054 hectares, or 14.2 per cent of the total cultivated land in the country. Nevertheless, at the present time agricultural activity in this area is dormant, producing low incomes for the farmers, so that the area has become an importer of foodstuffs with the relative expansion of employment in civil services.

The agricultural sector has started to diminish and eventually to become impoverished with a low level of productivity. It has also remained at the level of traditional subsistence farming and has not so far played any part in the economic development of the country in general or the region in particular.

Therefore, the area now faces problems of food supply. It has suffered the worst economic damage in the country and has been crippled in the face of overwhelming odds that have rendered it no longer desirable for the people. Sorghum, the main crop of the area, is now imported. In 1984, for instance, about 55,900 tons of sorghum were imported from Australia and Thailand (Assafar and Mohrem, 1985).

The weakness of the provincial agricultural economy is a product of various factors, including low technological levels, limited employment opportunities, and limited access to opportunities or services.

Indeed, most of the agricultural implements are very traditional. A wooden hoe, sickle and stick are the main local implements utilized in agricultural activity. Moreover, the new development process pays more attention to the problems and planning of urban areas, while the rural areas are generally neglected or only marginally considered.

Undoubtedly, the concentration on urban problems has great backwash effects on rural development in general and on agriculture in particular. The consequence is that the rural population have moved from a backward economy based upon traditional agriculture to the more

attractive urban areas where better incomes and work opportunities are available.

Before discussing agricultural problems, it is worth mentioning the actual agricultural practices and systems in the province, in order to understand the existing agricultural problems in this area.

6.2 Agricultural Practices and Systems

There are three main categories of cultivation practised in Jizan province, which range from pure rain-fed farming to permanent well-irrigated farming. Between these two extreme types, there are a large number of flood-irrigated methods and uses, which present different proportions of economic opportunities.

According to the Sogreah-Italconsult study made in 1967, the agricultural land use for an average year is as shown in table 6.1. Eighty-three per cent of the total agricultural land lies on the plains area; this is therefore where potential for expansion of output exists. Moreover, the foothills, which form the junction between the plains and the steep mountain slopes, cannot be neglected since these constitutes 16 per cent of the total arable land, and they are also distinguished by milder climatic conditions which can produce complementary crops to those grown in the plains area (see fig.6.1). The following is an analysis of the various types of agricultural practice in the province.

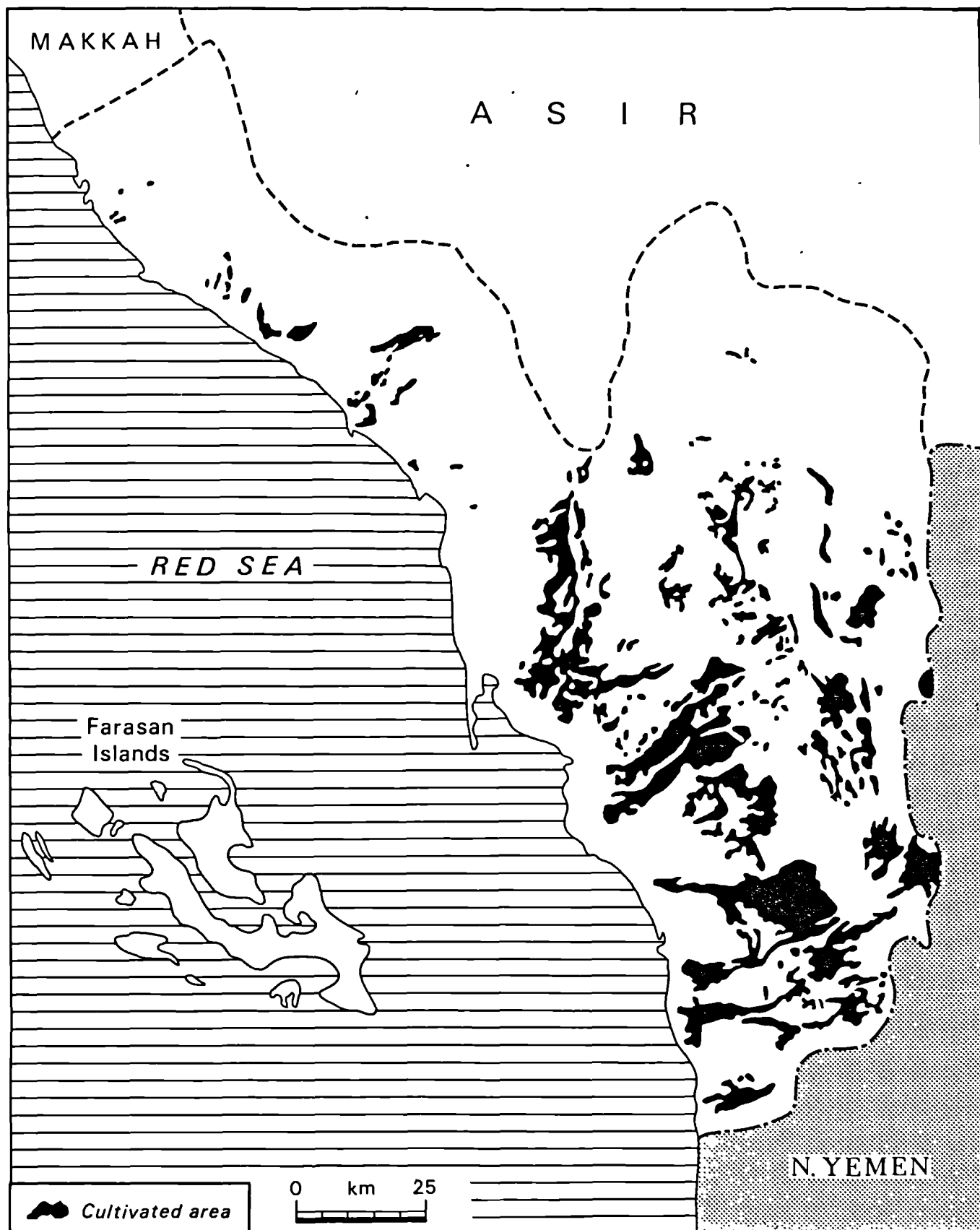


Fig.6.1 Distribution of Agricultural Land in Jizan Province

Source: Sogreah, 1983

Table 6.1 Agricultural Land Use in Jizan Province (Hectares)

Location	Irrigated Land	%	Dry Farming	%	Total	%
Plains Area	63,000	72	100,000	91	163,000	83
Foothills	22,500	26	9,000	8	31,500	16
Highlands	1,500	2	1,000	1	2,500	1
Total	87,000	100	110,000	100	197,000	100
%	44		56			100

Source: Serete (1980) adapted from Sogreah-Italconsult (1967)

6.2.1 Rain-fed or Dry Farming System

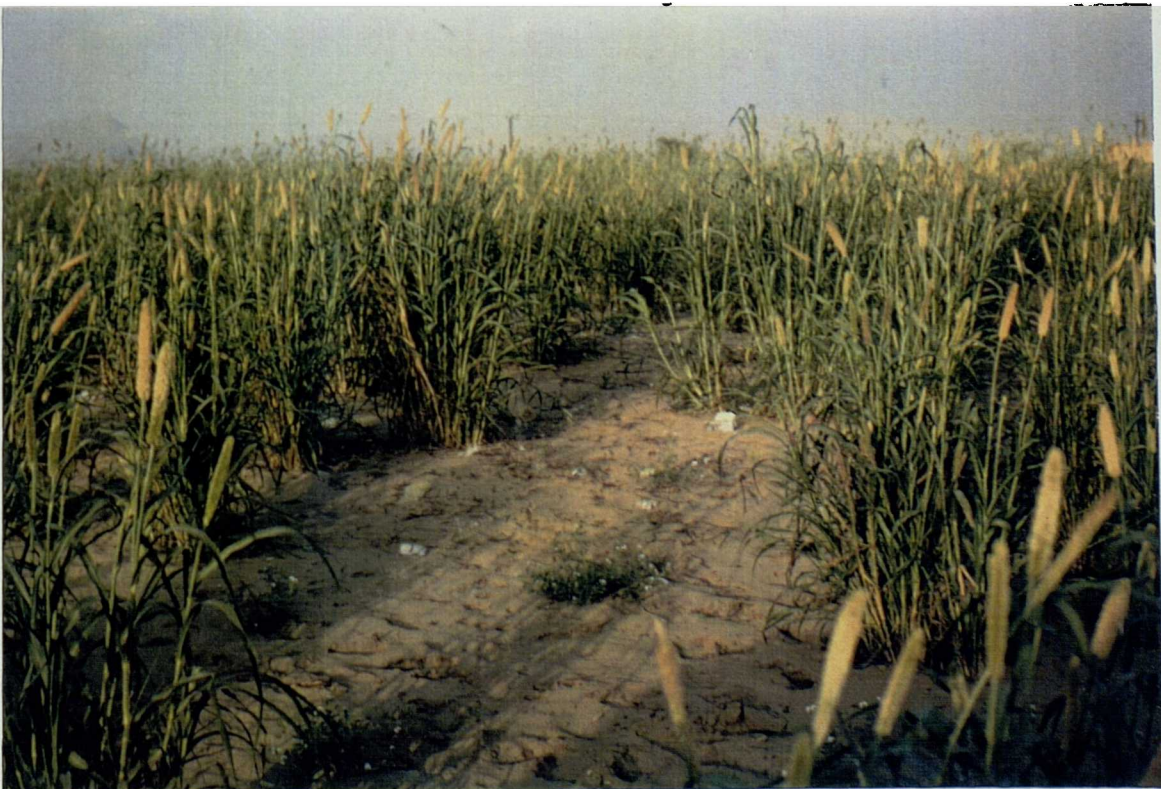
Dry farming occupies about 110,000 hectares, or 56 per cent of the total arable lands. The cultivated areas using dry farming techniques are distributed as follows: 91 per cent in the plains area, 8 per cent in the hilly area and only 1 per cent in the highlands.

In the plains area, the lands between wadis, called al-khabt, are not reached by flood irrigation. Whenever rain falls upon the sandy area, it enables the inhabitants of the small villages and hamlets to grow and cultivate a crop of millet (dukhun). (See fig.6.2). The plant is characterized by its ability to grow depending on rain which takes the form of scattered showers.

The system of cultivation is very traditional. The farmer uses a sharp stick to make a small hole about 10-15 centimetres deep in the sand and in this he drops a few seeds of millet which he covers with



Fig.6.2 Agricultural Fields in the Plains Area (a) refers to flood irrigation areas where sorghum, the major crop, is grown, (b) refers to dry farming where millet is cultivated upon sandy areas.



B

sand using his foot. After two to three months, the crop is ready to be harvested. The production of millet is limited and erratic, the inadequate rainfall often precluding any significant increase in the productivity of the rain-fed areas. Most of the inhabitants who depend on the rain-fed system are very poor, since the rate of return in the best rain year does not exceed SR 150 or \$40 per hectare. This is a situation which has forced the majority of farmers to reduce their cultivated land. The available data in tables 2-6 indicates that the land and the crops of millet have declined from 1,027 hectares and 1,126 tons in 1981/82 to 171 hectares and 66 tons in 1984/85.

6.2.2 Irrigation System

Irrigated lands constitute 87,000 hectares or 44 per cent of the total arable lands. The plains area dominates with 63,000 hectares or 72 per cent of these lands. The hilly area contains 22,500 hectares or 26 per cent, while only 1,500 hectares or 2 per cent are to be found in the highlands. The irrigated system can be classified into two kinds - flood-irrigation and well-irrigation.

6.2.2.1 Flood-Irrigated Farming

Flood-irrigated lands form about 85,000 hectares or 97.7 per cent of the total irrigated lands. According to the irrigation system, these lands can be classified in two categories. First are the permanently irrigated lands which constitute 33,000 hectares or 38 per cent of the total irrigated lands. The major part of these lands (26,000 hectares or 78.8 per cent) is cropped once per year, whilst a

small proportion (7,000 hectares or 21.2 per cent) is cropped twice or more times during the wet time. The second category are the flood-irrigated lands, constituting 52,000 hectares or 61.2 per cent, which are occasionally irrigated when the floods are extensive (see fig.6.3).

The flood-irrigation method is associated with the central plains where fertile lands spread alongside the wadis. The wadis are dry most of the year, but when heavy rains fall on the catchment highland areas, the wadis may become swollen with water producing flash floods. Sometimes, indeed, some wadis change their courses into several branches which destroy settlements and inhabited areas along their banks.

Irrigation depends entirely on the frequency and duration of the floods, so that throughout history, peasants have always sought to conserve a certain portion of the short-lived running water. They had built earth dams (ugum) along courses of the wadis. Such dams have been built co-operatively by farmers to divert the water to their fields. The size of dams varies according to the size of a wadi and its position within the flood areas. The channels which divert the water into fields are small and divided into small units (see fig.4.6, chapter 4). The agricultural lots are surrounded by small earth dams which are about 1.5m high. The water rises to 40-50 cm then the barriers are lifted allowing the water to flow into the next lot.

Actually, when the flood is powerful enough it usually subdues existing disputes, but it may cause severe damage to the soil as it sweeps alluvium away, especially in the areas which are close to the

main dam. On the other hand, when the flood is weak, only the upper lands get irrigated. Moreover, when the farmers have sown the seed, they do not allow other floods to pass through their fields to irrigate the lower lands which are in need of irrigation.

The flood-irrigation system is governed by general rules specifying the right of every farmer. It is carried out by turns during the time of flood. The most important of the principles governing the system are:

- * Flood waters are the property of the whole community and no one has the right to misuse or waste them.
- * Distribution of water is invariably from up-stream to down-stream for every single flood.
- * No-one can use more water than he needs.
- * Water rights were already in force.

In fact, the peasants are always keen to keep to these rules, and one of the most complicated problems that must be solved in any developing or modernizing project to be implemented in the area is how to carry out the project without harming or ruining the old traditional organization (Abdulfattah, 1981).

The flood-irrigated lands are more productive than any other lands, not only in Jizan, but also in the whole of the country. This high potential is due to the fertility of soils, the abundant flood water, as well as the easy topography of the areas which make these lands capable of achieving some development in the agricultural

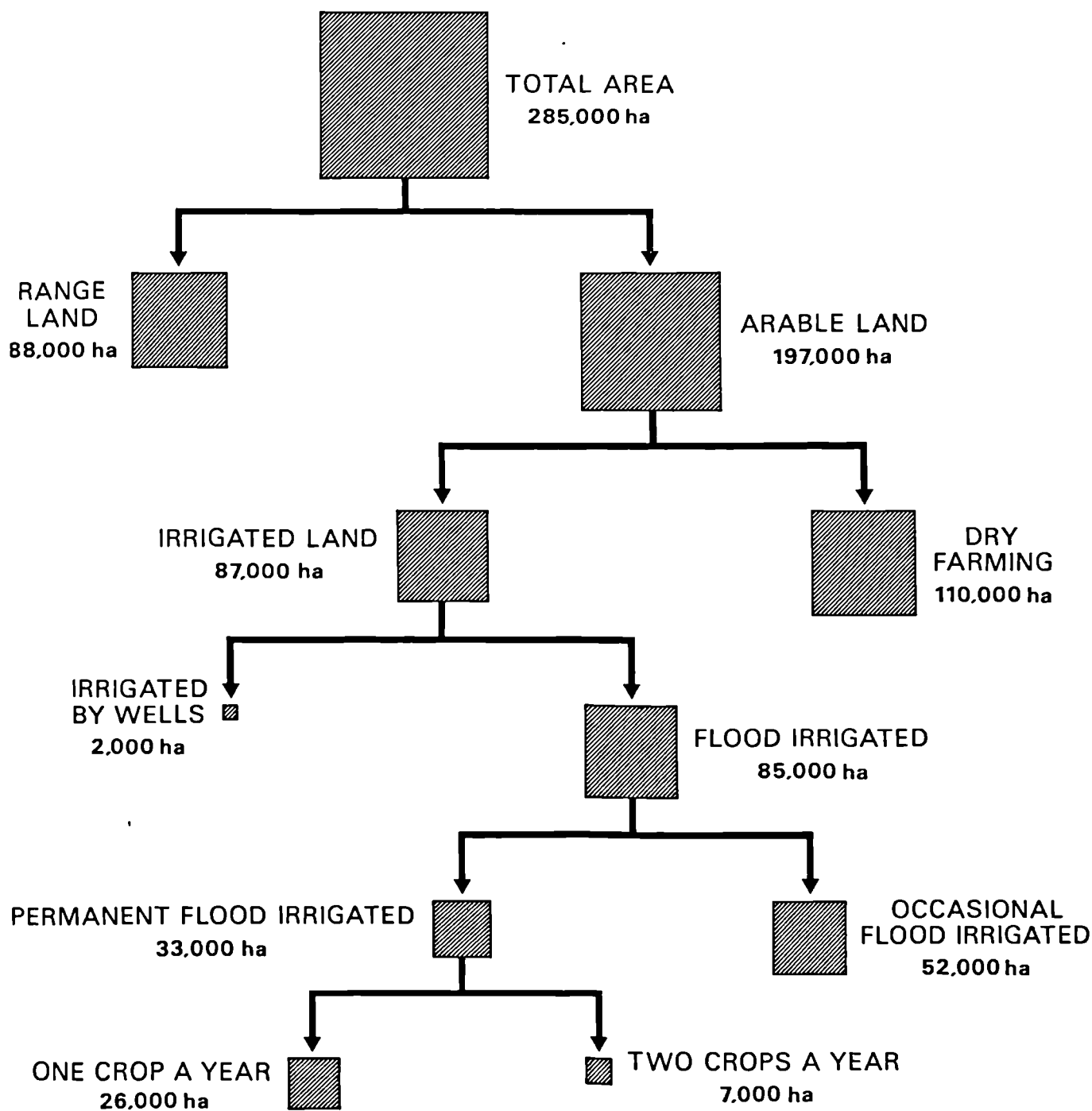


Fig.6.3 Classification of Agricultural Lands According to their Cultivation

Source: Serete, 1980

economy. Nevertheless, despite the high potential of these lands, the development trends are very limited. Most of the agricultural methods are very traditional. The earthen dams are erected today by mechanization. While this mechanization neither adds to the productivity of the fields nor improves the quality of the products, it does save many working hours for thousands of peasants. This spare time is very important particularly when we consider the present situation of village desertion, when the young men leave their villages and agricultural lands for jobs in the towns. These lands' desertion would have been dangerous and would have led to the destruction of cultivated areas, if machines had not been introduced (ibid., p64).

In the hilly areas, the flood waters are used to supplement the rains (annual rainfall between 200-400 mm) that fall directly on the fields situated at lower elevations (see fig.6.4) In the highlands, however, farming takes place on the graded slopes that depend on annual rainfall (400-600 mm). The cultivation areas are associated with terraces of irregular shape (see fig.6.5) and small size (100 to 300 sq.m) and they have high steps of 2-4 m (ibid., p70).

6.2.2.2 Well-Irrigated Farming

Hand-drilled wells pumped by animal power have been used for drinking-water and for irrigating small plots of land, but this type of well has recently been abandoned as people have started to use machine-drilled wells with mechanical pumps. The well-irrigated lands constitute 2 per cent of the total irrigated land. This development has resulted in rapid expansion in vast areas around the large

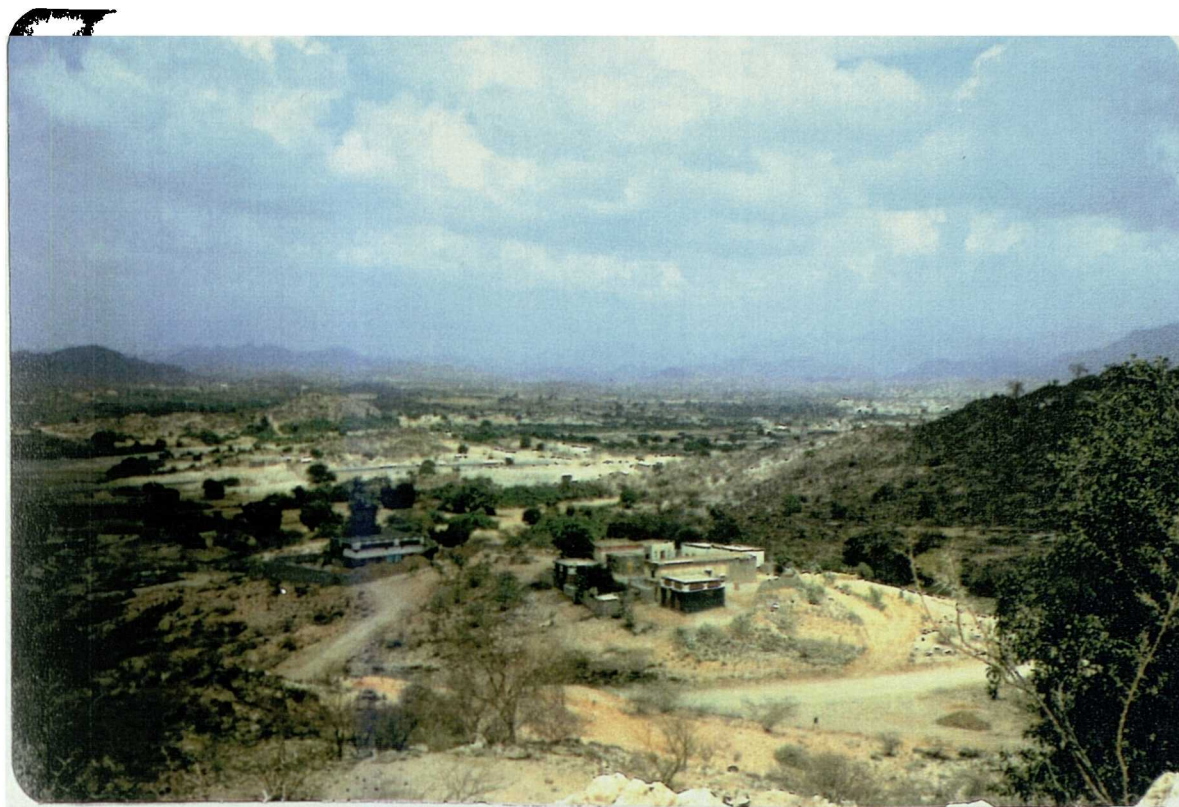


Fig. 6.4 **Agricultural field in the hilly area**

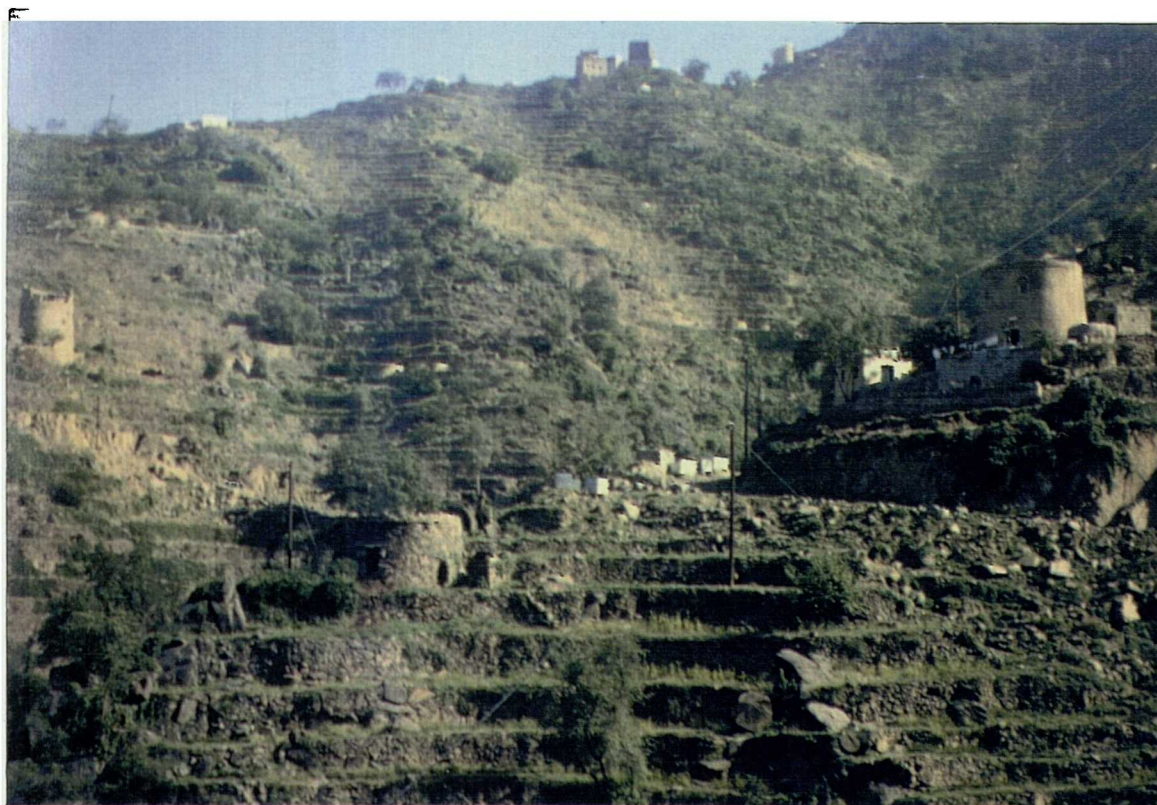


Fig. 6.5 **Cultivation field in the high mountain area**

settlement centres in the middle part of the plains area, particularly in the emirates of Sametah, Abu Arish, Sabaya, Dāhamad, and Baish. The reasons for this are:

1. The development of roads in this area, especially the main road connecting large urban centres in the province with other major urban centres in Asir and Al Hijaz regions. On the other hand, the local roads that connect the major urban centres of the province to each other have stimulated the extension of vegetable cultivation on account of the availability of urban markets. It is clear that the effect of better roads is one of the reasons for the concentration of well farming around the urban centres, while in remote rural areas where the paved roads are not developed, well-farming is not found. Farming here still depends largely on flood or rainfall systems.
2. The big increase of demand for vegetables by the relatively large number of urban workers, and also through changes in the eating habits of the growing local population (ibid., p60).
3. The very rapid growth of urban population both in the southern region in general and in Jizan province in particular. Good incomes and high standards have created a good market and a high demand for vegetable growing.
4. Financial and technical support given by the government, by which 50 per cent of the equipment costs are granted. The other 50 per cent is given as a long-term loan, free of interest, by the

Agricultural Bank. Moreover, these areas have easy access to technical assistance, services, and advice which is given by agricultural offices.

Well-irrigated farms have a size of 5 - 15 hectares, but due to insufficient supply of irrigation water, not more than 8 hectares are under production at the same time. Well-irrigated farms can be classified into three types:-

1. Vegetable farms with emphasis on local marketing of produce. These farms are situated around townships and aim at producing small quantities for daily sale on nearby markets. They are small in number and, in consequence of the production method, very labour intensive.
2. Vegetable farms with emphasis on distant marketing of produce. They grow primarily vegetables which are suited for transport over long distances outside of the province to such places as Asir, Al Hijaz and Riyadh markets. The farms are mechanized and trucks are hired for distant marketing of the crops. These farms are few in number and are concentrated around the large urban centres, particularly around Ab^uArish town where the Wadi Jizan agricultural project is located.
3. Farms with forage sorghum as the main crop and vegetables as minor crops. These farms are usually located in the remote rural areas, with difficult road and market access. Actually, there is very little interdependence between the traditional agricultural

system which depends on flood irrigation and this type of farm. Therefore, most of these farms are now smaller in size than the above farms. The reasons are the lack of capital, labour, and agricultural services, and the result is an increase of partnership enterprise to overcome the capital and labour shortage.

6.3 Crop Husbandry

The principal crops of Jizan province are associated with irrigation methods. In the flood-irrigated land, sorghum is the most exclusively cropped. A minor crop is sesame and occasionally water-melons. In the non-irrigated land where farms depend on rainfall, millet is the major crop. The third category of crop is related to well-irrigated land where vegetables are cultivated.

It is worth mentioning that quantities of crops and areas under cultivation vary widely according to wet or dry years, but the major changes in recent years are due to drastic variations in the labour force and shortages of agricultural services and technologies. Therefore the crops of Jizan province can be classified into two categories:-

6.3.1 Crops Grown Primarily for Subsistence

The major crops are sorghum, millet and sesame.

Sorghum:-

The most traditional grain crop in the province is sorghum (thurrah) which forms the basis of the agricultural system in whole tracts of the area. It has been the staple flood crop over much of the province for a long time, but recently, particularly in the middle of the plains area, it has become displaced by imported crops such as rice.

It is obvious that sorghum occupies more than 90 per cent of the total irrigated land and it has a dual value in providing both grain for human consumption and the fodder for livestock. The sowing time for sorghum is usually in the autumn, after the summer flood. Field preparation normally consists of ploughing and levelling carried out traditionally with simple ox-ploughs cutting not deeper than 15 cm (see fig.6.6).

Harvesting takes place about three months later and is carried out by hand using a small sickle to cut the stalk. The separation and collection of cobs is also done manually with a small sickle, after which they are placed on the threshing floor and beaten with a heavy stick (see fig.6.7). The stems of sorghum are then tied together in bundles, piled in the farmyard, and subsequently used as fodder.

This major crop of the area has, however, significantly declined as a result either directly or indirectly of developments elsewhere in the economy, so that farmers have been attracted from the traditional farms to more remunerative jobs in the towns. This situation reflects

the reduction in farmers' incomes from crop production on agricultural land. The available data (table 6.2) indicates that the agricultural land devoted to sorghum production in the province has been reduced from 64,192 hectares producing 25,950 tons in 1981/82 to 9,873 hectares producing 8,908 tons in 1985/86.

Moreover, this traditional crop is characterized by the low incomes that it produces for the growers. According to the FAO study (1972) "Irrigation Development in the Wadi Jizan", the net return per hectare, which is the difference between the gross value of production and the cost incurred, has been estimated at about SR470 (£177). This actually reflects the low income of the majority of farmers in the province.

Millet:-

In terms of quantity produced, millet comes in second place after sorghum, and it occupies large cultivated areas in the inter-wadis which depend on rainfall. Yields vary according to the extent of rainfall. If there is heavy rain, a second or third crop may be obtained. Harvesting, threshing and winnowing are carried out manually as for sorghum.

The crop has recently run into certain disadvantages which have contributed to its reduction in terms both of cultivated land and crop production. Table 6.2 shows that in 1981/82 there were 1,027 hectares of land cultivated with 1,126 tons of produce, but in 1984/85, these numbers declined to 171 hectares and 66 tons. Therefore, millet fodder

Table 6.2 Decline of Traditional Crops in Jizan Province (1981-86)

Crops	1981/82		1983/84		1984/85		1985/86	
	area in ha.	prod. in tons	area in ha.	prod. in tons	area in ha.	prod. in tons	area in ha.	prod. in tons
Sorghum	64192	25950	21766	10076	16474	14704	9873	8908
Millet	1027	1126	199	56	171	66	-	-
Sesame	423	224	122	87	148	116	-	-
Total	65642	27300	22087	10219	16793	14886	9873	8908

Source: 1 - Agricultural census 1981/82



Fig. 6.6 An Ox-drawn hoe for sowing



Fig.6.7 **Traditional Harvest Methods**

is of poor quality and there is no high demand for this crop.

Sesame:-

This crop is the second most important crop grown in the irrigated land. It was formerly more widely grown than it is now. The people grow sesame for the seeds which are crushed in primitive camel-driven presses to obtain oil. Recently this crop has begun to face competition from imported oil, which has reduced its cultivation throughout the province.

Sesame cultivation generally occupies only about 5 per cent of the total irrigated area with a net return of SR225 (\$60) per hectare. Table 6.2 indicates that this crop has declined from 423 hectares producing 224 tons in 1981/82 to 148 hectares producing 116 tons in 1984/85. It is clear therefore that all the traditional crops, which are in fact the staple crops, are characterized by low levels of production using traditional implements. The demand for these crops is very low, so that the price is not attractive for them as cash crops. Therefore, the majority of rural farms are unable to improve their production under current circumstances. Consequently, the majority of the rural population have abandoned this means of livelihood to seek for alternative jobs in urban centres.

6.3.2 Crops Grown for Local Sale

Apart from the majority of farmers who depend on the traditional crops, there are a few farmers who have recognized the best prospect of

increasing cash income by growing new crops which have a high demand in the local markets. During the last few years, many vegetable crops such as tomatoes, okra, egg-plant, and squash, have been introduced to the province on a large scale, particularly around urban centres.

The cultivation of vegetables occupies about 2 per cent of the total irrigated land. Unfortunately, due to the climatic conditions of the plains areas, most of the vegetables can be grown successfully only during the cooler months of the year, i.e. from September to May. Field preparation is usually done manually, since tractors and other mechanical equipment are not best suited for vegetable cultivation under furrow irrigation. Thus, much work has to be done manually and since hand labour is in short supply, cultivation standards in vegetable production are poor.

Moreover, nursery work is generally on a poor level. Plants are often weak and poorly developed, and losses after transplanting are unusually high. Fertilizers and pesticides are used by trial and error. The result of this is that the yields of the vegetables fluctuate widely and a good yield in one year may be followed by a complete crop failure in the next. A German consultancy employed to study the agricultural development of South Tihama (1978) indicated that the fluctuation in yields greatly influences the hand labour input for harvesting of the crops. Therefore, the risk of production may be considered as an important factor in vegetable cultivation. Apart from the production risks, vegetables suffer from price risks also. Price fluctuations are caused by the fluctuation in yields as well as by shortages and surplus production.

Table 6.3 Increase in Vegetable Land-Usage and Crop Returns (1981-86)

Crops	1981/82		1983/84		1984/85		1985/86	
	area in ha.	prod. in tons	area in ha.	prod. in tons	area in ha.	prod. in tons	area in ha.	prod. in tons
Tomato	1511	12904	1255	13298	1748	17869	1879	20192
Eggplant	273	2470	196	2543	261	2917	379	3851
Okra	681	3813	332	2602	725	3429	740	4006
Squash	114	674	123	593	134	635	219	1578
Total	2579	19861	1906	19036	2868	24850	3217	29627

Source: 1 - Agricultural Census 1981/82
2 - Statistical Year Book, 1987

The net return from new vegetable production is much higher than the net return from traditional crops. The net return for vegetables was estimated at SR 15.290 (\$4,077) per hectare. The consequence of the high return is that the cultivation of land for these crops is rapidly increasing (see table 6.3). For instance, within six years, (1981-86) the cultivation of land for vegetables has increased by 25 per cent, and crop production has also increased by 49.2 per cent in the same period. Undoubtedly, the rapid transition to vegetable growing is due to increased road building providing easy access to the market towns.

6.4 Livestock Husbandry

Livestock production is an important form of farming in the flood-irrigated land as well as in the non-irrigated areas. Table 6.4 shows that goats, sheep and cows are the most common stock in the province. The total of goats in the province in 1986 constituted about 23 per cent of the total goats in the country. Goats are found predominantly in the lower parts of the wadis and in the hilly areas where they partly replace cows and sheep as milk and meat producers. Here animals are fed on the natural rangelands.

The total per centage of sheep in the province in 1986 was 13 per cent of the total sheep in the country. Sheep are mainly kept for the production of meat and only in a very few cases are milked. They are raised on the farms in the plains area, where feed is provided by sorghum. Cattle comprise about 27 per cent of the total cattle in the country. Cattle are the traditional draught animals for field

cultivation, so they are kept for the production of power as well as milk, whilst their meat is not so highly esteemed.

Camels are primarily kept as transport animals. The province has only a small proportion, i.e. only 3 per cent of the camels in the whole country. They are distributed in the area of saline depressions along the coast of the Red Sea. Actually, diseases are numerous and the mortality rate is high. No vaccination programmes are carried out and veterinary facilities in the area are poor and animal nutrition of a very low standard.

Table 6.4 Estimated Numbers of Livestock in Jizan Province (1983-86)

Livestock	1983/84	1984/85	1985/86
Goats	755098	620742	779279
Sheep	674859	603627	787839
Cows	53428	41583	46932
Camels	18206	11517	14339

Source: Statistical Year Book, 1987

6.5 Fishing

Despite the fact that the majority of the inhabitants work in farming, those who live in the coastal strip prefer to be in the fishing profession as the saline land does not permit much farming. The area has a 320 km-long coast on the Red Sea, and the 1974 census showed that there were some 1,728 fishermen in the area, most of whom live in Jizan town and in the emirates of Al Madaya and the other villages of Sabya and Dihamah. Moreover, there are some businesses

related to fishing in the inland emirates such as Sametah, Al Khowbah, Abu Arish, and Al Aridah.

Fisheries are located on the west coast as well as in the areas close to Far^asan and Al Hid, north-west of Far^asan. Fishing equipment is simple and traditional. The boats are usually made by craftsmen in small workshops in Jizan town. However, modern fibre-glass boats have recently been imported. There is also a modern, well-equipped fishing company. The annual catch of fresh fish is about 3,000 tons, which is 25 per cent of the total catch from the Red Sea which amounts to 12,000 tons. Both wholesale and retail sales are common; the latter is usually done in the open air. There is also a 5 per cent commission for the middlemen.

6.6 Problems of Agricultural Development

Jizan province is best known throughout the country for its agricultural potential, but the primary objective of this economic sector is to supply family needs. However, it has recently become undesirable to the majority of the rural population, the following various factors having an unfavourable influence on the productive potential of the province. In order to have a complete overall view of the problems, these factors will be analyzed in the following pages.

6.6.1 Cropping System

The major crops grown in the best cultivated land, i.e. the flood-irrigated land, are extremely limited and consist principally of

sorghum, which covers over 90 per cent of the total irrigated land. The second crop is sesame which is cultivated on 7-10 per cent of this area. It is obvious that no rotation can be employed under the traditional land-use system and it is common practice to grow sorghum on the same field year after year. This type of cropping does not allow the farmer to follow an individual and progressive farm management plan which could develop a more diversified provincial agriculture.

Crops like sorghum, millet and sesame, which are the main traditional crops and the basis of the agricultural system, have shown a significant decline, as expressed in table 6.2. The survey of sample villages, table 6.5, shows that sorghum is the major crop in the province. 93.4 per cent of the sample farmers cultivated sorghum. Only 15.5 per cent sell their produce. Millet and sesame are also grown for family consumption. Only 15.4 and 35.3 per cent respectively of those who cultivate millet and sesame sell their produce.

Table 6.5 Respondents Growing and Selling Crops

Crop	No of Farmers	%	No. of farmers who cultivate for sale	%
Sorghum	71	93.4	11	15.5
Millet	26	34	4	15.4
Sesame	17	22.4	6	35.3
Wheat	9	11.8	4	44.4
Coffee	16	21.0	7	43.7
Bananas	19	25	13	68.4
Vegetables	22	29	19	86.4

Source: Fieldwork, 1989

In fact, these crops were formerly the main traditional, staple

foods in the province and more widely grown than now. However, they have certain disadvantages and their cultivation has declined in the face of increasing imported crops such as rice. They require much labour in order to produce respectable yields. In addition, the main disadvantages of sorghum and millet are their taste. The consequence is that the demand for these traditional crops has declined and their price also does not make pulses as attractive as cash crops. For example, the price of SAh (local volume) of sorghum was SR 20 in 1975, but this figure decreased to SR 8 in 1989. So, a high percentage of the province's farmers are characterized by their low incomes and traditional level of life.

It is obvious that a small number of farmers have replaced sorghum by planting vegetables, particularly around urban centres. 22 per cent of farmers grow vegetables, 86.4 per cent of whom produce vegetables for sale. This in fact brings in sufficient income to set these farmers apart from the mass of the peasants in their standard of living.

6.6.2 Traditional and Uneconomic Farming Practices

The following is a brief analysis of the cultural practices in agricultural production.

*** - Insufficient use of farming equipment**

In the rain-fed land, farmers depend only on human energy, where millet is grown and planted using a simple stick pierced

into the land. In the flood-irrigated land, which is the most important land not only in this province but also in the whole of the country, a wooden plough drawn by oxen is still the common method for cultivating land. According to the field survey, however, about 70 per cent of the rural farmers do not use tractors for cultivation.

Only 30 per cent of farmers reported that they used tractors for the construction and rebuilding of diversion dams and field-basins and, to a limited extent, for ploughing, particularly in the middle part of the plains area. The majority of farmers who cultivate sorghum depend on the efforts of themselves and their families. The result is that the agricultural production is characterized by low incomes and consumed by farmers' families.

*** - Insufficient use of main agricultural inputs**

Fertilizers are hardly ever used in Jizan province, where a very small number use them in well-irrigated lands around urban areas. However, in the flood-irrigated land and well-irrigated land in remote rural areas, fertilizers are not used. According to the writer's survey, 91 per cent of the total farmers do not use fertilisers. Only a small proportion of farmers, who live around urban centres and depend on well-irrigation for agricultural production, mentioned their use of fertilisers.

Farmers were asked to give reasons for their not using

fertilizers and table 6.6 shows that the highest number (77.6 per cent) of those who do not use fertilizers, mentioned that using fertilizers was not known to them. A further 36.8 per cent of farmers mentioned distance from larger urban centres as a second reason for their not using fertilizers, and thirdly, 9.2 per cent mentioned that the price of fertilizers was too high.

Table 6.6 Reasons for Not Using Fertilizers

Reason	No of Farmers	Percentage
Fertilizers are unknown to traditional farmers	59	77.6
Fertilizer centres too far	28	36.8
Fertilizers too expensive	7	9.2

Source: Fieldwork, 1989

Indeed, the problem of not using fertilizers is related to insufficient distribution of fertilizers in rural areas. Rural farmers have to travel long distances to reach urban centres to benefit from fertilizer facilities. Table 6.7 shows that only 23.7 per cent of the sample farmers travel less than 20km to reach the nearest urban centres compared to 68.4 per cent who must travel distance between 20 and 50km and 7.9 per cent who have to travel more than 50km.

The insufficient distribution of this facility is reflected in the low level of fertilizer usage which indeed affects agricultural production. Fig.6.8 shows that some farmers from

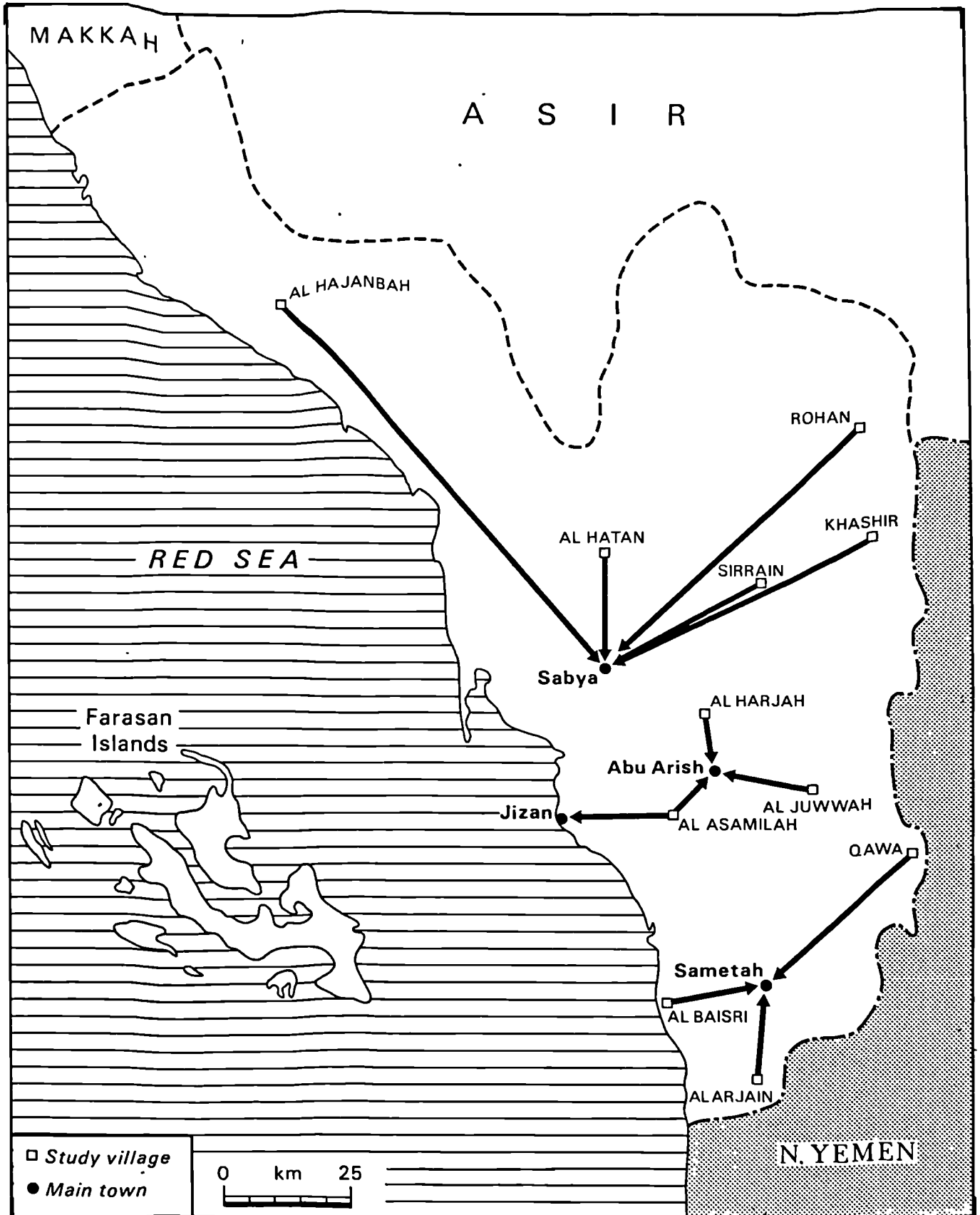


Fig.6.8 Travel to Fertilizer by Respondents

Khashir and Rohan in the mountain area have to travel to Sabya, a distance of more than 60 km. Farmers in Al Hajanbah have to travel more than 75 km to Sabya in order to get fertilizers. Farmers in Qawa village have to travel more than 45 km to Sametah town, and those in Al Arjain and Al Baisri have to travel more than 30 km to the same town. It is important to note that agricultural development requires the distribution of fertilizers at rural centres, so that they are easily accessible to people who live in remote rural areas.

Table 6.7 Distances Between Farmers and Fertilizer Centres

Distance (km)	No of Farmers	Percentage
1-9	7	9.2
10-19	11	14.5
20-29	26	34.2
30-39	9	11.8
40-49	17	22.4
More than 50	6	7.9
Total	76	100

Source: Fieldwork, 1989

Moreover, added to the problem of not using fertilizers, most farmers are illiterate and relatively uneducated. It is not surprising therefore, to find that many of them do not know how to handle modern equipment correctly. They also do not practise crop rotation and most farmers keep no records and have no experience of pest and disease control. It follows that they are unable to combat sorghum carbonization or termites that attack and destroy fruit-trees. Apart from these problems, we also

found that the farmers do not know much about price fluctuations in the market. This may be because the majority of farmers do not produce for sale, but only for family consumption.

* - **High cost of agricultural preparation**

The main traditional crops are characterized by high input costs per amount of food. The cultivation of sorghum, which is the main crop in the province, is not suitable for mechanization owing to the plant's long stem. This crop demands a lot of time and effort. Farmers prepare the lands before irrigation using ox-drawn ploughs. The lands are reploughed after irrigation and are left until the sowing season. After sowing comes weeding, and when the crop is ready, it has to be protected from birds. Lastly comes picking and threshing, jobs both tiresome and time-consuming since it is all done by hand.

This long chain of processing is the condition in 90 per cent of the farms in the province, and it is rather costly taking into account the shortage of labour and scarcity of modern equipment. That is why the cost is so high in proportion to the slight and unencouraging rewards. Field studies and interviews have revealed that the mean profit per hectare of flood-irrigated land is at its best SR 600-1000 (\$160-267), whereas of the rain-irrigated land, it is SR 120-170 (\$32-45). Taking into consideration the fact that most landowners have 1.8 to 2.5 hectares, we may conclude that their income from farming is very modest compared to what they can get in the civil service. The

field survey also enquired into the monthly incomes in the rural areas. Table 6.8 indicates that more than half of the respondents (51 per cent) have reported incomes of less than SR 1000 per month. A further 31 per cent have incomes between SR 1000 and 2000, and only 18 per cent have incomes exceeding SR 2000 per month.

Table 6.8 Income Distribution in Rural Areas, 1989

Monthly income (SR)	No of Respondents	Percentage
100 - 499	30	24.4
500 - 999	33	26.8
1000 - 1499	13	10.5
1500 - 1999	25	20.3
More than 2000	22	17.9
Total	123	100

Source: Fieldwork, 1989

It is worth noting the differences between the rural incomes and urban incomes in the province. The available data compiled by the Serote Survey in 1979 indicated that the incomes of the rural population were lower than those of people living in urban areas. Table 6.9 shows that approximately 60 per cent of the rural families earn less than SR 1000 (\$267) per month and that 31 per cent of them earn SR 1000-2000 (\$267-533), which means that 91 per cent of rural families earn less than SR 2000 against 47 per cent of the total number of families in urban areas. This clearly indicates the low income derivable from agriculture, bearing in mind that it is the main source of income

of the majority of the rural population, compared to what urban areas have to offer which is certainly more rewarding than farming.

Table 6.9 Income Distribution in Rural and Urban Areas, 1979

Monthly Income (SR)	Urban Areas		Rural Areas	
	No. of households	%	No. of households	%
Less than 1000	3700	21.1	13800	59.8
1000 to 2000	4520	25.8	7150	30.9
2000 to 5000	2340	30.0	1810	7.8
More than 500	4040	23.1	340	1.5
Total	17500	100	23100	100

Source: Serate Survey, 1979

Unfortunately, cash crops in fruit and vegetables, which could provide farmers with sufficient monetary incomes, instead of sorghum, are not properly developed in most rural areas because of the absence of marketing structures, inaccessibility of major towns, and inadequate distribution of agricultural services.

6.6.3 Land Tenure

Almost all agricultural lands in Jizan province are privately owned. This ownership is manifested in different forms.

- 1 - Personal private possession of land (mulk), this case being the

most widespread form. The land is fully at the disposal of the owner. The owner may sell, lease, give away, or bequeath his land. The size of personal private property is unlimited. For the legitimization of land, one must have either a document of ownership, which is issued by a religious court, or one must have a certificate proving possession, which is provided by confidants and which again must be accepted by the religious court. However, the existence of ownership documents among landowners is still rare.

- 2 - Joint ownership of the same piece of land or farm estate (sharakah). This form of ownership is the more common in cases of ownership of well-irrigated farms, where several persons are the joint owners of a relatively high capital-intensive enterprise and run it in partnership.
- 3 - Endowment (waqf). The land here was originally private property which was handed over to religious foundations by pious Moslems. Waqf land is usually managed by the original donors, or their descendants, or by share-croppers on behalf of the religious foundations. The proceeds from the land are divided between the share-croppers and the poor of the villages.
- 4 - Musha land is a private form of estate jointly owned by a tribe. In the case of death of the head of the tribe, the land property will not be divided between the tribal family, but will remain undivided in one ownership unit.

It is obvious that in recent years, the situation of the real estate market in the province has been characterized by remarkable dynamism supported by the increasing amount of purchasing power of the non-agriculturally employed people. Buying land is, at least for the time being, the only real possibility of investing for these people. The value of the land and the relevant prices paid for it are subject to the process of socio-economic change caused by the considerable growth of the economic activities of the province in recent years. Better and more valuable lands are located alongside the upper parts of the wadis.

The main characteristic of agricultural lands is that the land holdings are generally small. According to the 1979 agricultural census, the average size of holding in Saudi Arabia was 6.7 hectares, whilst there were 2.7 plots per holding. In Jizan province, most owners in irrigated land have holdings of 1.8 to 2.8 hectares. The average plot size is 0.2 to 1.0 hectares. The writer's survey (see table 6.10) indicated that the majority of farmers (69.7 per cent) have less than 3 hectares, 22.3 per cent have between 3 and 5 hectares, and only 8 per cent have more than 5 hectares. Therefore, plots are small and constitute an obstacle to mechanization which might solve the problem of labour shortage and increase agricultural production as well. Italconsult (1965) noted that apart from the grave lack of infrastructures, especially roads, a negative aspect of the land tenure system from the production viewpoint is the degree of fragmentation and dispersion of properties, which makes good farming impossible, especially as regards the effective utilization of animals and equipment, and leads to the farmer having to spend a large portion of

dead time every day to reach his place of work.

Table 6.10 Distribution of Farmers according to Size of Farm

Farm size in ha	No. of Farmers	Percentage
Less than 1	11	14.4
1 - 1.99	24	31.6
2 - 2.99	18	23.7
3 - 3.99	10	13.1
4 - 4.99	7	9.2
More than 5	6	8.0
Total	76	100

Source: Fieldwork, 1989

Obviously, larger holdings are more frequently found in the central plains, particularly around urban areas, which are owned by local rich people. Here some ownerships exceed 100 hectares. In the hilly area, farmers cultivate graded slopes and the land properties are generally small, usually about 1.2-1.5 hectares. In the high mountains, a medium ownership comprises 30-40 individual small terraced fields, which are dispersed mainly in the cultivated area belonging to one hamlet.

The farm workers in the province may be classified according to the following types:-

- 1 - Owners who work on their farms. These represent the majority in the flood-irrigated and rain-fed farms.
- 2 - Owners who work on their farms but also employ other farm hands.

This type is common in both flood and well-irrigated farms.

- 3 - Owners who live away from their farms, leaving them to sharecroppers. This type is common in flood-irrigated farms.
- 4 - Owners who live away from their farms but maintain agricultural activities managed by employees. This type is found in well-irrigated farms.

In recent years, the social structure of the agricultural areas of Jizan Province has shown some characteristics which are related to the contractual aspects of sharecropping as a result of rural migration. Sharecropping is practised in the medium-sized ownerships as well as in the large holdings. In the case of small or medium-sized ownerships, the sharecropper is usually a peasant of the same village who works the land with his oxen and gets half of the grain produced and all the fodder. Sharecropping in large ownerships is different. The absentee landlord, who lives most of the time in town, lets all his land in one village to be administrated by a representative (wakil) who is, in most cases, the local chief in the village.

According to Sogreah's enquiries (1983), sharecropping is tending to increase as a result of the rural exodus. However, the way in which the crops are divided is changing to the advantage of the sharecropper who is now claiming a larger share of the harvest.

6.6.4 Shortage of Agricultural Labour

In Jizan province, as is the case with other agrarian societies in developing countries, agricultural production depends on the supply of manpower. As we have noted, 70 per cent of farmers do not use agricultural machinery, but are heavily dependent on the efforts of farmers and their families, in addition to a number of Yemeni wage-earners or sharecroppers.

When the country entered the oil age, agricultural income became affected negatively and dwindled away in the shadow of the direct and indirect oil revenues which are incomparably superior to the modest incomes of the agricultural sector. Johany et al. (1986, p109) wrote that in 1970, this sector employed some 70 per cent of the country's population, primarily in the style of farming that had been practised for generations. By 1980, the fraction of the labour force employed in agriculture had fallen to one-fourth. That quarter of all workers accounted for only 1.2 per cent of GDP and only 3.5 per cent of non-oil GDP.

Indeed, in Jizan province, the agricultural sector, which is the foundation of the indigenous economy, is suffering from a serious shortage of labour. This problem emerges as a consequence of rural-urban migration. This exodus is of two types. First, it is related to the wide difference between what occurs in urban areas and rural areas, so that the latter have become significantly attractive to farm labourers seeking to escape from a primitive and backward economy to better incomes in urban areas. Most farmers, particularly young men,

have emigrated to take up jobs in the army, the police force, the coastguard, or other divisions of the civil service, where a comfortable life and regular salary are available.

The second type is related to the expansion of education. The spread of schools has also absorbed the sons of farmers. During the field survey, the writer observed that the farmers do not see any future for their children, in the agricultural sector; rather they encourage them to work in government jobs. Moreover, sons also show no interest at all in agricultural work. On completion of their education, they abandon this activity which is considered arduous and unremunerative in comparison with other possibilities open to them in urban areas. Therefore, they invest neither time, nor energy, nor money in this activity. An FAO report of 1978 on land and water project identification, observed that the reduction of the agricultural labour force was by 0.9 per cent per annum in recent years prior to 1978 for the whole country. Due to particular human and physical conditions, Jizan province was subjected to a much greater rate of decline, since it lost probably more than a third of its agricultural labour force in five years (Serete, 1980, p91).

Moreover, the stagnation and retraction from the agricultural sector has been confirmed by the Serete survey made in 1979 in eight emirates of the plains area. The survey shows that the agricultural labour force in rural areas declined from 75 per cent in 1974 to 44 per cent in 1979 (see chapter 4). The study also indicates that the situation in remote areas outside the scope of the study was far worse. The decrease of agricultural labour in the province is associated with

a converse increase in civil service workers, an employment sector which jumped from 17 per cent in 1974 to 41 per cent in 1979. As a consequence, there has been a severe shortage of farm hands, which is most evident during harvest time when vast areas are left unreaped. The field study and interviews with farmers have revealed that the shortage of farm hands has sharply reduced the area of cultivated land and that there are now vast areas which have been abandoned as a result of the shortage of labour. The reduction of land cultivated by local crops is shown in table 6.2. Table 6.11 shows that 89.5 per cent of the total farmers indicated the problem of labour as the main factor resulting in reduced agricultural land, and this finding has been actually confirmed by field-study observations.

Table 6.11 Reasons for Reduced Agricultural Land

Reason	No. of Farmers	Per centage
Labour Shortage	68	89.5
Water Shortage	4	5.3
Salinity	2	2.6
Other Reasons	2	2.6
Total	76	100

Source: Fieldwork, 1989

Furthermore, according to the Serete survey of 1979, many Yemenis who used to labour on the land, have also migrated northwards to the larger towns in the middle-belt regions, where wages are higher in the construction and building industry. This is evident in the reduction of non-Saudi agricultural workers from 18 per cent in 1974 to 3 per cent in 1979, clearly indicating the steady drift from agriculture to

other forms of employment.

6.6.5 Primitive Agricultural Marketing

One of the worst problems facing the farmers in Saudi Arabia is the absence of marketing services and facilities. Al-Obaid (1987, p276-7) wrote that the study conducted by the Saudi Arabian Agricultural Bank in 1982 indicated that marketing was the major problem of farmers. These problems derived from the following factors:

1. Long distances between farmers and major markets.
2. Paucity of paved roads causing high transportation and product spoilage costs.
3. Low prices received at the local markets because a high proportion of the price paid by consumers goes to the middlemen and retailers.
4. Inadequate cold storage, especially for perishable products, so that farmers are obliged to sell for any price offered.
5. Scarcity and expense of labour and agricultural machinery which are of considerable help in certain farming operations, such as harvesting and collecting the produce.

Jizan province has been distinguished by its weekly markets, through which the vast majority of the rural population and

agricultural produce moves. The system of markets in the province has been discussed in Chapter 4. The bearing here is on the working of the markets in agricultural development. Obviously the traditional agricultural crops such as sorghum, millet, sesame, and livestock have created local markets from ancient times. However, the volume of these crops is very limited by the size of the market. Low incomes with low demands for the main crops have affected the production of these crops. Therefore most rural farmers grow for their own requirements. Among cash crops, vegetables are the most strongly affected by the size of the urban markets.

Weekly markets are distributed throughout most of the rural area and the majority of the rural population have contact with them. They play an important role in the economy of the sub-district areas since they form the first point of meeting in respect of the goods for buyers and sellers. They also provide a useful social function, for here people from different areas can meet to exchange news and views. However, these important markets are relatively isolated from urban areas due to poor infrastructure and communications. Moreover, the traditional agricultural economy - essentially of the subsistence type - definitely influenced the marketing system which has certain particular primitive features. The markets do not have even the minimum of equipment and small businesses are organized almost exclusively along family lines.

Al-Jerash (1972, p265), pointed out that "the structure of these markets is primitive and even the minima of modern basic marketing equipment and facilities do not exist. They are held in the open air

and there are no fixed rules with regard to the provision of space or the location of each individual lot."

It is obvious that the distribution structure for agricultural products in these markets has not changed substantially for several decades. Farmers bring their produce, generally poorly packed, to the nearest market and sell it to a wholesaler through the services of dealers. The latter works on a percentage basis, usually taking between 4 and 7 per cent of the price. The dealers are nearly always medium-size or larger landowners living in the market centres. They collect the produce from farmers and then either sell it in the same market or send it to another market.

Livestock markets hinge around direct sales by owners. On market days, the owner and his sons drive the animals that have been chosen for sale to a nearby market. Number of heads rather than the weight or quality of stock is the basic unit of price in the wholesale transactions concluded through individual bargaining. This curious, traditional method of sale, as Al-Jerash observed, often adversely affects the farm income because this is its major cash income (*ibid.*, p267).

The techniques of weighing and measuring in the rural market, are also rudimentary (see fig.6.9). In fact, as most of the goods are sold on a volumetric basis, the actual weight is only very approximate. It is obvious that for the same product the relationship between volumetric measure and the weight is hardly ever constant, and so it is very easy for confusion to arise between market and market, and

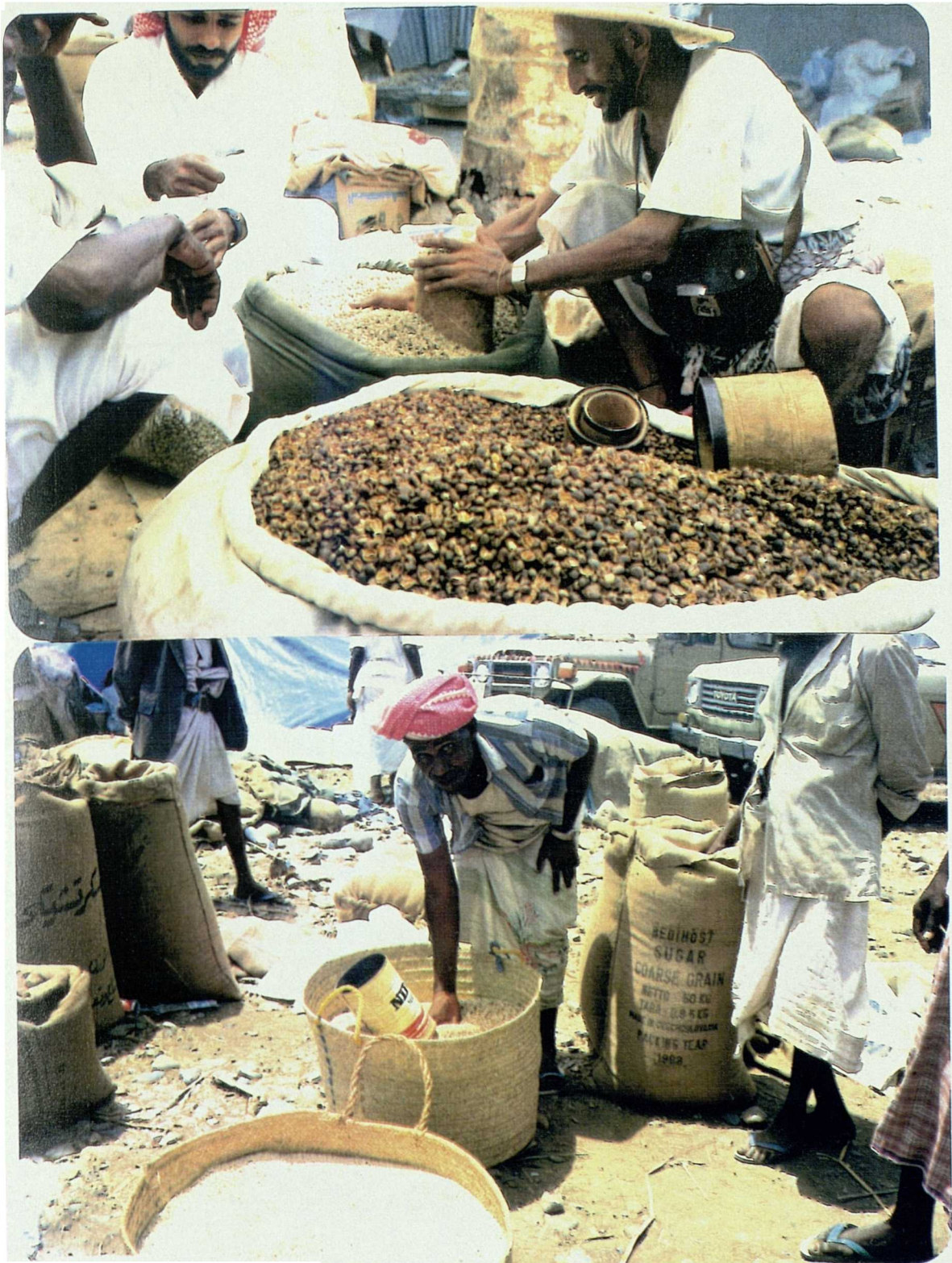


Fig.6.9 Traditional Techniques of Weighing and Measuring in the Rural Markets

discrepancies occur in the buying and selling. The producer might be losing when buying whereas the dealer may lose when selling on the markets even in the same area where different volumetric measures are in force. Table 6.12 shows the main units of measure operative in the province.

Table 6.12 Local Units of Measure Used for Agricultural Produce

Name	Weight or Volume	Equivalent	
		In Local Units	In Metric Units
<u>Okieh</u>	Weight	-	28 grammes
Small <u>rutol</u>	Volume	1/40 <u>tanaka</u>	0.454 litres
Large <u>rutol</u>	Volume	1/20 commercial	0.580 litres
Local <u>farasla</u>	Volume	1 commercial <u>sah</u>	11,600 litres
English <u>farasla</u>	Volume	28.8 small <u>rutol</u>	13,100 litres
Small state <u>sah</u>	Volume	1/4 commercial <u>sah</u>	2,800 litres
Commercial <u>sah</u>	Volume	1 local <u>farasla</u>	11,600 litres
<u>Tanaka</u>	Volume	40 small <u>rutol</u>	18,150 litres

Note: Since agricultural produce is measured in units of volume, the corresponding weight varies for each product.

Source: Ministry of Agriculture and Water, "Land Water Surveys on the Wadi Jizan", Vol. IV, reported by FAO (Rome, 1965), p85.

Payment in cash is the norm for agricultural produce. However, a form of sale based on faith in the debtor's word is common in the province. This occurs during the years of bad harvest and the most affected are the poorest farmers. In this situation, merchants,

especially those with the greatest liquid capital, allow the farmers to buy the basic necessities on credit with doubled prices.

Indeed, one of the main problems in improving agricultural marketing is that of linking the rural agricultural farms to the local markets, and linking these markets with major urban centres. Most of the rural roads are merely earth tracks which are kept open solely by the constant passage of trucks. In consequence, transit along them is difficult, especially during the rainy and flooding season. Al-Jerash points out that "in this region, transport difficulties, limited market-contacts and indebtedness to local moneylenders are still deterrents to great effort in production." (ibid., p269)

There has, however, been rapid development in road and traffic facilities in recent years, but this has in the main been restricted to communications between the major urban centres while in the remote rural areas, animals are still used for transport, a method which is common in supplying the plains area with products from the mountainous region. The difficulty of feeder roads and the methods of transport for marketing in rural areas are quite clear. This situation is reflected in the incidence of transport costs on the prices and the adverse effect on the quality of products, which often reach the markets in a very poor condition.

On market days, the rural population travel to the weekly markets. The field study findings, represented in table 6.13, analyzes the venues of weekly markets visited by the rural population.

It appears that the town of Abu Arish had the highest proportion of respondents in the province. This town attracted 21 per cent due to its central location in the province, so that many rural people from the plains and hilly areas come to shop here. Abu Arish is followed by Sametah with 12.2 per cent, Ad Dyer with 11.4 per cent, and Baish and Al Khawbah with 10.5 per cent each. The other respondents shop at other weekly markets which are scattered throughout the province (see fig.6.10).

6.6.6 Inadequate Supporting Services

A branch of the Ministry of Agriculture and Water Resources and the Jizan branch of the Agricultural Bank are two institutions jointly responsible for agricultural development in the province. The Agricultural Bank was founded in 1975 with its headquarters in Jizan town and a few small branches in other towns including Sabya, Sametah, and Fayfa. The bank grants loans and agricultural aid to farmers, poultry-keepers, agricultural projects, fishermen and agricultural co-operatives. Since its opening and until May 1988, the bank has granted 15,823 loans or 5 per cent of the total loans in the country. Table 6.14 shows that 40 per cent were short-term, (i.e. one-year loans) for the purchase of fertilizers and seeds, and for wages. Sixty per cent were medium-term (i.e. five-year) loans for growing vegetables and for animal husbandry. No long-term loans have been granted as yet. All the Agricultural Bank's loans are made free of interest, but to date, only a slight proportion of loans have been received by Jizan province, and only 5 per cent of the farmers in the province have been considered eligible for loans.

Table 6.13 Venues of Weekly Markets Visited by Respondents

Market	No. of Persons	%
Abu Arish	26	21.1
Sametah	15	12.2
Ad Dyer	14	11.4
Baish	13	10.5
Al Khawbah	13	10.5
Al Ardan	12	9.8
Dahmad	9	7.3
Iban	8	6.5
Ad Dorb	5	4.1
Sabya	3	2.4
As Shuqaiq	3	2.4
Total	123	100

Source: Fieldwork, 1989

Table 6.14 Loans Granted by the Agricultural Bank per Branch

Branch	Short-term Loans	Medium-term Loans	Total	%
Jizan Office	2,482	2,369	4,851	30.8
Sabya Office	2,457	4,854	7,311	46.2
Sametah Office	1,330	1,758	3,088	19.5
Fayfa Office	-	573	573	3.5
Total	6,269	9,454	15,825	100
%	40	60	100	

Source: Head Office of the Agricultural Bank, Jizan Branch, 1988

It is clear therefore, that despite the effort being exerted towards agricultural development, this institution is still a long way off fulfilling its agricultural commitments. All branches of

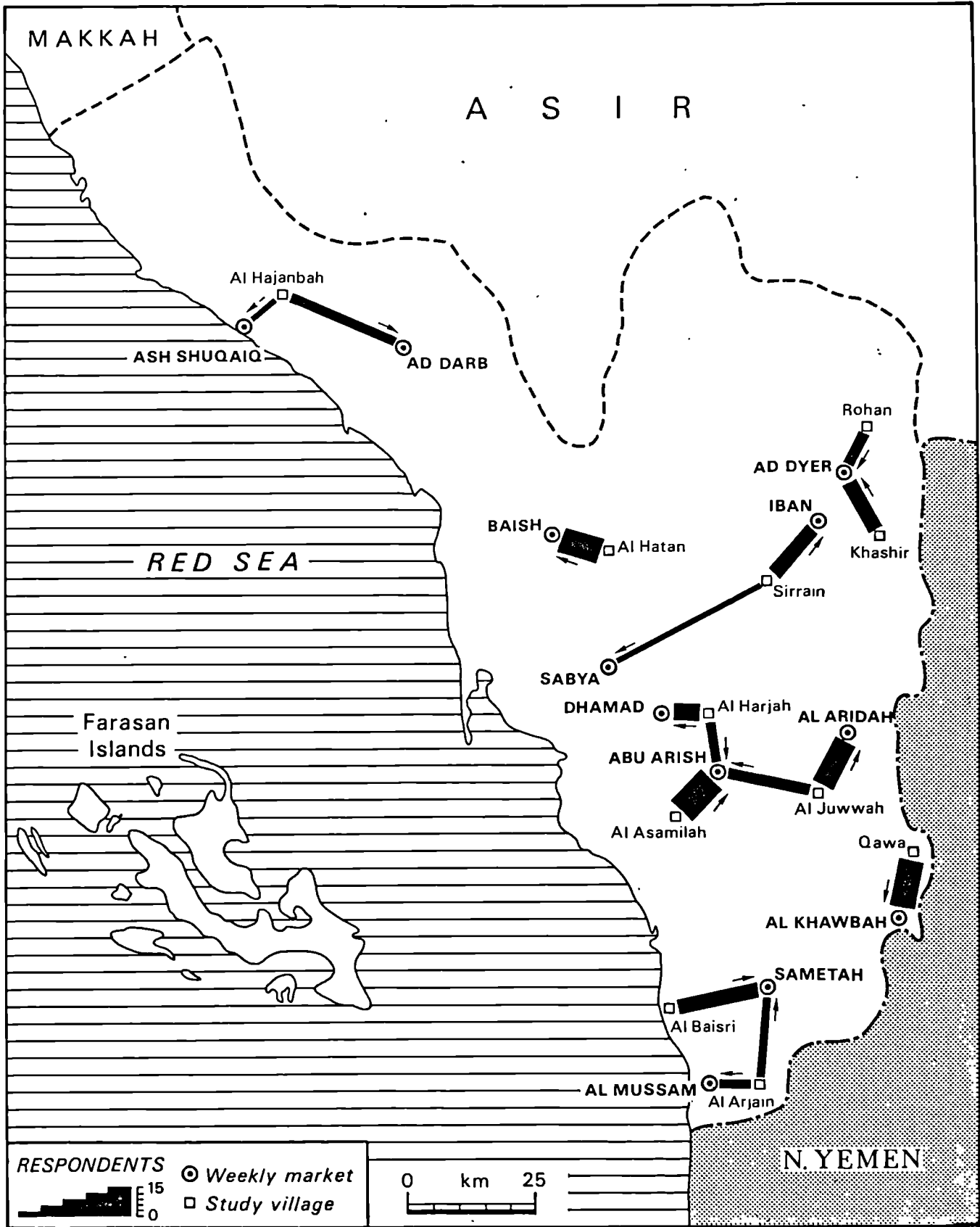


Fig.6.10 Travel to Weekly Markets by Respondents

Agricultural Banks are located in large urban centres. This creates much better opportunities for the urban areas and their surrounding villages to benefit from the loans than for the remote rural areas.

According to a village survey in the rural areas, only 6.5 per cent of the total farmers have a loan from the Agricultural Bank. Farmers were asked to give reasons for not getting an agricultural loan, and table 6.15 indicates that the highest number of farmers in rural areas (50.7 per cent) mentioned that the income from agriculture is low, a situation leading to the problem of inability to repay the agricultural loan. A further 25.4 per cent attributed not getting a loan to the difficulty of the actual loan process. For example, farmers have to possess official documents issued by a court testifying that someone has sold his land to someone else. This is in fact, very rare in the province since land-ownership is transferred by inheritance from generation to generation by traditional written documents. In fact, farmers claim that obtaining official deeds can take up to five years, with frequent visits to town to obtain them.

A further 18.3 per cent attributed not getting a loan to their possessing insufficient farmland. As mentioned earlier, landholdings are generally very small. Therefore, many farmers who hold only a small piece of land, cannot get a loan. Finally, 5.6 per cent of farmers mentioned that they did not need a loan. Thus, a high proportion of rural farmers are, in practice, excluded from the benefits of agricultural loans.

Table 6.15 Reasons for not getting an Agricultural Loan

Reason	No. of Farmers	%
Low agricultural income	36	50.7
Difficulty of loan process	18	25.4
Insufficient land	13	18.3
Do not need a loan	4	5.6
Total	71	100

Source: Fieldwork, 1989

However, the population who have been able to buy land and are thus presently eligible for loans constitute a small proportion of the total farmers for whom farming is not their basic work. Most of them live in towns and are engaged in government jobs or trading activities.

The second supporting institute is the branch of the Ministry of Agriculture and Water. It is responsible for agricultural pest-control guidance, as well as for the treatment and immunization of cattle. The head office is located in Jizan town, with small branches also in Al Ahad, Abu Arish, Sabya, Iban, and Ash Shuqaiq. However, this service intended for agricultural improvement is characterized by a low level of distribution in the rural areas. There is about one service centre to 154 villages in the province. This limited number of agricultural service centres with scattered rural settlements and poor communications and transport facilities leaves a large proportion of farmers with only limited access to agricultural services. As a matter of fact, these branches suffer a great shortage of suitably trained personnel, particularly in the field of guidance. The absence of

incentives for encouraging adequate personnel to work in remote rural areas has resulted in mass centralization of services and personnel in Jizan town. This has left the rural areas without sufficient guidance.

Despite the fact that farmers can benefit from pest-control services free of charge, this service still requires a lot of improvement and it has to be redistributed in such a way as to be accessible to the rural population. It is clear that the services of these small branches are far from adequate, because the time-span between the request for service and the actual response normally amounts to several days. In addition to inadequate distribution of these services, the employers are not adequately trained to render good agricultural services, because most of them are rural migrants without basic skills.

The survey of villages studied, found that only 11.8 per cent of the total farmers said that they benefited from the agricultural services 44 per cent of those who benefited from services did so only once in a year, 33 per cent did so twice a year, and 23 per cent did so thrice.

Farmers were asked to give reasons for not claiming agricultural services and Table 6.16 shows that the highest number of interviewed farmers (43.3 per cent) attributed it to the agricultural system which depended on flood irrigation, so that it is impossible to use the services in large sorghum plantations. A further 28.3 per cent indicated that there was no fast response from agricultural centres. In addition, 23.9 per cent of respondents mentioned that the

agricultural service centres were too far from villages and farms.

Table 6.16 Reasons for not using Agricultural Services

Reason	No. of Persons	%
Inappropriate to traditional agricultural system	29	43.3
No quick response	19	28.3
Service centre too far away	16	23.9
Other reasons	3	4.5
Total	67	100

Source: Fieldwork, 1989

The uneven distribution of the agricultural offices can be seen where there is a low proportion of service centres to villages. For example, in Al Ahad office there are 2 technicians and 16 workmen and this office is responsible for 7 emirates: Al Tawal, Dihamah, Al Mussam, Sametah, Al Ahad, As Salb, and Al Khawbah, with a total of about 203 villages. This means that on average one technician is responsible for 101 villages. The Sabya branch has 3 technicians and a veterinary assistant. This office is also responsible for 9 emirates: Sabya, Dhamad, Ash Shuqairi, Al Goz, Horub, Baish, Al Aliyah, Masliyah, and Ar Rith, with a total of 210 villages; that is an average of one technician for 7 villages. This high ratio is common in all the other offices and illustrates the weakness and shortage of suitable agricultural services in the province.

Before we conclude this section, we should not pass without

noticing the Centre of Developing Wadi Jizan Project, which is located near to Abu Arish town. This project includes FAO experts and provides technical guidance services. Their services are, however, confined to farmers involved in the administration of the special project in Wadi Jizan and the high standard of technical service provided here is diametrically opposed to the farming standards and the status of the farmers in remote rural areas away from the project.

6.7 Manufacturing Industry

The manufacturing sector is like the agricultural sector as it is still a traditional and lagging sector. All manufacturing refers to handicrafts and workshop activities, which are simple both in quality and in the number of industrial establishments.

· It is obvious that this sector does not provide much contribution to employment within the province. According to the Census of Private Establishments in 1981, the average number of employees per privately owned establishment in the province was 3.2 workers, compared to 7 workers in the kingdom. Table 6.17 reveals that 95 per cent of industrial firms have less than 10 employees. Establishments with more than 10 employees were very few and concentrated in food activities and construction materials production. The total number of manufacturing establishments in the province in the above year was 357 firms, representing only 1.6 per cent of the total manufacturing in the kingdom. Moreover, the total number of employees was 1,153 workers or 0.7 per cent of the total manufacturing employees in the country. Clearly this reflects the fact that the industrial sector in Jizan

Table 6.17 Manufacturing Establishments by Employment Size in Jizan Province, 1981

Establishment Type	No of Establishments by Employment Size					Total of Establishments	%	Total of Employees	%
	1	2-4	5-9	10-19	> 20				
Foods and beverages	29	25	12	10	2	78	21.8	348	30.2
Textiles, clothing and leather	32	28	2	-	-	62	17.4	116	10.0
Wood and furniture	5	7	3	-	-	15	4.2	40	3.5
Bricks, blocks, cement and glass	2	26	11	2	1	42	11.8	205	17.8
Fabricated metal products and machinery	44	81	21	3	-	149	41.7	407	35.3
Other manufacturing establishments	5	4	2	-	-	11	3.1	37	3.2
Total	117	171	51	15	3	357	100	1153	100
%	32.8	47.9	14.3	4.2	0.8	100	-	-	-

Source: Compiled from Census of Private Establishments, Central Department of Statistics, 1981

province is still in the early stages of development.

Indeed, industrial activity in the province is generally limited to handicrafts, and small-scale industrial and repair activities in the following fields.

Foods and Beverages

These activities occupy 21.8 per cent of the local manufacturing with 30 per cent of the workers, most of these activities involve bakeries, ice factories, sweets and confectionery, flour mills, sesame oil milling, slaughtering, and dairy products.

Textiles and Ready Made Clothes

This field includes about 17 per cent of the total establishments with 10 per cent of the workers. Most of these activities are concentrated in the traditional handicrafts, including cloth, straw hats and hat making, embroidery work, and leather tanning.

Wood Products

This field contains 4.2 per cent of the total manufacturing with 3.5 per cent of the workers. Fishing boats, windows, and doors are the major products here.

Construction Materials

These activities include about 12 per cent of the total establishments with 18 per cent of the workers. Most of these activities concentrate on the production of cement blocks, pipes, and sanitary concrete items. These activities are practised in open-air sites along the access roads to the major towns.

Metal Products

This field of activities occupies most of the established firms in the province, i.e. 41.7 per cent with 35 per cent of the workers. Most of the activities involve blacksmiths, the manufacturing of water tanks for housing and trucks, structural steel work, hardware, and metal plating.

However, most of the above activities are concentrated in the major towns of Jizan, Sabya, Abu Arish, and Sametah. The attraction of these towns is that the best sites for industrial activities are here due to their location in relation to the major transport roads which make them easily accessible from the port and airport of the province. Secondly, they act as urban markets for consumers and workers. Thirdly, these towns are characterized by the highest personal income in the province. Fourthly, these centres dominate most of the socio-economic activities, thereby increasing the potential business market. Finally, the government policy has been to encourage industrial development by making available industrial loans for investment projects in the cities.

Actually, in Jizan province in general, the manufacturing and industrial activities are still traditional and lagging behind progress compared with major urban centres in the country. Indeed, the late development in basic infrastructure and agriculture have led to extreme delay in establishing manufacturing and industrial sectors, particularly in terms of agro-industrial sectors. The improvement in this sector should be incorporated in a comprehensive rural development policy. A small towns policy would be a vital approach in respect of small manufacturing development in the province.

6.8 Conclusion

The foregoing discussion reveals that there are various factors having an unfavourable influence on agricultural activity in Jizan province. It is clear that with the transition to a new economy in the country, the traditional activities, particularly in the agricultural sector, have become weak and incapable of stimulating local development. For instance, in Jizan province, prices for the major local crops of sorghum and millet almost certainly fall with any marked increase in their production. The result is that poverty has become the main problem for the rural population, particularly for those engaged in agriculture. This poverty can be seen in the low levels of family income and low standards of living.

The problem of rural planning in Jizan province is how best agricultural life can be reorganized to return to its former flourishing state. It is obvious that emphasis must be placed on substantial cash crops. This undoubtedly requires immediate aid in the

form of introducing better cropping patterns, seeds, fertilizers, mechanized field operation, technical training, pesticides, and the like.

Moreover, where there are rural markets, feeder roads should be improved. All these services should be available to those small towns throughout where there are weekly markets. These service centres would give the majority of the rural farms a chance to obtain easy and comfortable access to the services they need. The concentration of social and economic activities in the low levels of settlements must play an important role in the revitalization of the agricultural sector by attracting the rural population to return to live in the rural areas.

Obviously, rural areas are not only suffering from primitive agricultural practices, but also from the uneven distribution of services. These problems are taken up in the following chapters.

Chapter 7

Public Service Provision in Jizan Province

7.1 Introduction

The previous chapter examined the problems of the traditional indigenous economic sectors in the province. This chapter and the following one review in addition the major issues of service provision in the study areas.

Prior to our discussion of the provision of services, it will be worth reviewing the major problems experienced by the remoteness of the province from the core or developing regions. In consequence of its remoteness, the province was late to benefit from the development process that has affected the rest of the country. Indeed, there is a wide disparity in the distribution of public investment in social and physical services between the province and the rest of the country in general, and between urban and rural areas within the province in particular.

According to the socio-economic survey of villages and Hajar in the kingdom in 1984, the distribution of services and facilities in the villages of the province is poor, the level of distribution being generally below the national average. As far as education is concerned, the province is among the most poorly off with respect to all the levels of girls' schooling, and to the boys' intermediate and secondary levels. With regard to health services, the province is considered as near the bottom of the list. Moreover, the survey also

illustrates that, the villages of the province were also poorly off with respect to road provision, quality of houses, drinking water, power-grid connection, telephone network, waste collection, and post office facilities.

Undoubtedly, the national development plans of the country have made strong commitments to expand the development benefits incrementally in the hope that a large proportion of the population will benefit from these services. Therefore, many branches of ministries and government offices have been established throughout the provinces to accelerate the development process. It is obvious that there is a significant expansion of development achievements in terms of social and public services. The most visible effect is seen in education services, particularly in the primary schools. Health services have also improved during recent years and new government hospitals and health centres have been established. Moreover, there is a similar development in the communications and other essential services.

However, observation reveals that most of the above services have favoured urban locations while the rural areas, where the majority of the population live, have received only marginal attention. So, the question is whether this majority actually have access to development's achievements and whether they benefit from them. In fact, there are no available data or research findings concerning these issues. For this reason, the writer has been compelled to rely on the findings of a field survey in order to examine the provision of services and the rural population's access to these services. This chapter deals with

problems of education, health, and road transport services in Jizan province.

7.2 Education

Education continued to receive top priority in the government development plans, because of its importance as a key for social infrastructure which is vital for the development process. The structure of the education system in Saudi Arabia comprises three levels: elementary, intermediate, and secondary schools. The elementary level is considered as a compulsory level. Education is free at all levels and according to the Islamic law there is a separation between boys' and girls' schools. Boys' education is under the supervision of the Ministry of Education, while girls' education is under the supervision of the General Presidency of Girls' Education.

Although standards in education in the province have improved recently, this service still lags behind in the remote rural areas. Their problems appear in the quality, quantity, and accessibility of educational services. Unfortunately, there is no up-to-date data available on education, not only for the province but also for the whole country. So this study relies on the 1974 Population Census and the writer's fieldwork in 1988 and 1989.

According to the 1974 Population Census (see table 7.1), over 80 per cent of the province's population over ten years of age were illiterate, and about half the remainder were literate up to elementary level only. Therefore, a high proportion of the population were not

properly schooled. Moreover, the table shows a wide variation between the emirate centres and rural areas. The illiteracy rate was much higher among the rural population, both male and female, than among the urban population. This, in fact, reflects the earlier development of schools in the emirate's towns, particularly major urban centres, for the rural areas showed a slower development of schools, particularly in terms of girls' education.

In addition, table 7.2 shows the number of pupils who attended school in 1974 between six and nine years of age. Out of 52,442 children between six and nine, there were only 10,737 (or 20.5 per cent) enrolled in school. Moreover, there was a wide variation between towns and villages. About half the boys and 31 per cent of the girls in towns were in schools. On the other hand, in rural areas there were only 34.7 per cent of boys and 3.7 per cent of girls in schools. The situation of girls was far worse in rural areas than in towns. This reflects the slowness of educational development in the province in general and in rural areas in particular.

Undoubtedly, the education system has experienced massive improvements during recent years. According to the Serate survey (see table 7.3), the ratio of illiteracy has decreased from 82 per cent in 1974 to 54.5 per cent in 1979. The illiteracy ratio was 44 per cent in urban areas and 66 per cent in rural areas. Greater differences in the pattern of education processes between urban and rural areas can be seen when we compare male educational status with that of females in the two areas. Indeed, urban areas had a lower illiteracy rate (27.7 per cent among males and 61 per cent among females). On the other

Table 7.1 Population Aged Ten Years Old and Over by Educational Status in Jizan Province, 1974

Educational Status	Emirate Centres		Villages		Total		Total both Sexes %
	M %	F %	M %	F %	M %	F %	
Illiterate	53.5	83.4	76.2	97.8	70.5	94.4	82.6
Read only	4.5	2.1	4.8	0.8	4.7	1.1	2.8
Literate	24.4	8.7	14.5	1.0	16.9	2.8	9.7
Elem. Level	8.9	2.7	2.4	0.1	4.0	0.7	2.4
Int. Level	3.6	1.0	1.0	0.1	1.7	0.2	1.1
Sec. Level	2.8	0.9	0.5	0.1	1.2	0.3	0.7
Diploma	0.5	0.1	0.1	-	0.2	-	0.1
Uni. Degree	1.2	0.2	0.3	-	0.5	0.1	0.3
Not stated	0.6	0.9	0.2	0.1	0.3	0.4	0.4
Total	100	100	100	100	100	100	100

Source: 1974 Population Census, Jizan Province

Table 7.2 Population Aged Six to Nine Attending Schools, 1974

Area	Boys		Girls		Total in School	
	Number	% in School	Number	% in School	Number	% in school
Emirate Centres	2900	49.4	1626	31.0	4526	40.5
Villages	5519	34.7	692	3.7	6211	15.2
Total	8419	31.0	2318	9.2	10737	20.5

Source: 1974 Population Census, Jizan Province

Table 7.3 Education Levels of Population Ten Year Old and Over by Sex in Urban and Rural Areas (8 Emirates), 1979

Educational	Urban			Rural			Total Area		Total both Sexes
	M %	F %	Total %	M %	F %	Total %	M %	F %	
Illiterate	27.7	61	44.4	45.8	86	66.4	36.6	72.5	54.5
Read only	21.8	11	16.5	27.9	11	19.3	25	11.3	18.2
Elem. Level	22.8	14.9	18.6	15.6	2	18.6	18.6	8.8	13.7
Int. Level	10.5	7.7	9.2	6.7	1	3.7	8.7	4.4	6.6
Sec. Level	11.2	4.0	7.5	3.6	-	1.9	7.6	2.2	4.9
Uni. Degree	6	1.4	3.8	0.4	-	0.2	3.5	0.8	2.1
Total	100	100	100	100	100	100	100	100	100

Source: Compiled from Serate Survey, 1979

hand, the illiteracy rate was much higher in rural areas (45.8 per cent among males and 86 per cent among females). This disparity is actually due to a deficiency in the number of schools in the rural areas as well as a lack of public transport.

3.2.1 The Spatial Distribution of Schools

The branches of the Ministry of Education and the General Presidency of Girls' Education have exerted great efforts in order to raise the standard of education in the province. Despite these major efforts, however, the standard of education in the rural areas still lags behind and many of the rural population still suffer from the problem of inaccessibility of intermediate and secondary schools, particularly in terms of girls' schools. The following discussion will attempt to examine the distribution of schools in the province.

3.2.2 Elementary Schools

Elementary education provides the basis on which knowledge is built. This level serves children aged from six to twelve years. The majority of schools in the province are for primary-level education. Table 7.4 shows that the province contains about 418 boys' elementary schools, or 9 per cent of the total elementary schools in the whole country. Elementary schools represent 75 per cent of the total boys' schools. The general ratio of elementary schools in the province is one school for 1,234 inhabitants, a figure which is higher than the national average. According to the Sogreah survey (1984), the national average was one school to 931 inhabitants. Elementary schools are

distributed in the province as follows. The plains area dominates numerically with 58 per cent of the total boys' schools in the province and an average of one school for 1,477 inhabitants. In the hilly area, there is one school for 1,025 inhabitants, while in the high mountains area there is one school for 711 inhabitants.

Table 7.4 Distribution of Elementary Schools in the Provinces, 1988

Area	Boys' Schools		Girls' Schools	
	Number	Ratio to Populat'n	Number	Ratio to Popula'tn
Plains Area	243	1,477	193	1,859
Hilly Area	104	1,025	34	3,136
Mountains Area	71	711	17	2,969
Total	418	1,234	244	2,115

Compiled from: 1. Population estimation, 1980
2. Boys' and Girls' Education Offices in Jizan Province, 1988

When we come to girls' schools, table 7.4 also shows that the province includes 244 elementary girls' schools, or 7 per cent of the total elementary schools in the kingdom. The girls' elementary schools in the province take up 78 per cent of the total girls' schools in the province, with a general average of one school to 2,115 inhabitants, while the national average was one school to 1,963 inhabitants. There is a wide variation in the distribution of these schools among the different areas of the province. The plains area predominates numerically with 79 per cent of elementary schools and an average of

one school per 1,859 inhabitants.

The hilly area contains about 14 per cent of these schools with an average of one school for 3,136 inhabitants. Finally, the high mountains area contains 7 per cent of girls' elementary schools, with an average of one school per 2,969 inhabitants.

In order to measure the spatial pattern of elementary schools, a nearest-neighbour analysis was carried out. The index of this method ranges from zero to 2.15. A score of zero represents a complete clustering point, a value of 1 indicating randomness of distribution and a value of 2.15 representing a high dispersion. It can be calculated as follows:

$$R = \frac{ra}{re}$$

where R = a measure of the pattern of points distribution

ra = distance average

re = average expected distance which is calculated as follows:

$$r^e = \frac{1}{2\sqrt{N/A}}$$

N = number of points

A = study area size

Table 7.5 shows that the results of the analysis (with chosen significance level 0.01), reveal that the pattern of distribution of schools tends to be random for the province as a whole for boys' and dispersion for girls' schools. The variations can be seen within the province areas. The plains area shows a cluster distribution for both kinds of schools, while the hilly and mountain areas show a slight

dispersion of schools, particularly of girls' schools. The variation in the distribution of schools according to the R-index can be explained by the differences in the pattern of distribution of settlements in the province, as they tend to be clustered in the plains area and dispersed in the hilly and mountain areas.

Table 7.5 Results of Nearest-Neighbour Analysis for Elementary Schools in Jizan Province, 1988

Area	No. of Schools	Mean Observed Distance "ra"	Expected Mean Distance "re"	Nearest Neighbour Index "R"	One-tail Test of randomness (at =0.01)
<u>Jizan Province</u>					
Boys' Schools	418	3.0	2.89	1.038	Accept
Girls' Schools	244	4.5	3.76	1.196	Reject
<u>Plains Area</u>					
Boys' Schools	243	2.6	3.12	0.833	Reject
Girls' Schools	193	3.2	3.51	0.911	Reject
<u>Hilly Area</u>					
Boys' Schools	104	3.2	2.65	1.207	Reject
Girls' Schools	34	6.0	4.23	1.45	Reject
<u>Mountain Area</u>					
Boys' School	71	3.3	2.58	1.279	Reject
Girls' School	17	6.3	4.22	1.492	Reject

It is obvious that the number of girls' schools is less than the boys' schools in the province. Indeed, girls' education has started rather late. In 1980, there were only 107 schools, but in 1988 the number had increased to 244 schools, i.e. by a 5.6 per cent growth rate during eight years. However, elementary schools are distributed in the plains areas more than in the hilly and mountain area. This disparity

can also be seen in the distribution of headquarters offices of girls' education which are located in the plains area (particularly in urban centres).

As a result of inadequate distribution of girls' elementary schools, some students have to travel to reach elementary schools. The available data shows that in 1988, there were 32,211 elementary girl students in the province, and that about 5,102 students (or 15.8 per cent) travelled outside their villages. Table 7.6 shows that 58.6 per cent of those travelling to schools have to travel up to 5 km, while a further 19.5 per cent travel more than 10 km.

Table 7.6 Distances Travelled by Girl Pupils to Elementary Schools in Jizan Province, 1988

Distances in km	No. of Students	%	Cummulative %
2-5	2988	58.6	58.6
6-9	1117	21.9	80.5
10-13	865	16.9	97.4
> 13	132	2.6	100
Total	5102	100	-

Source: Presidency of Girls' Education Office in Jizan Province, 1988

7.2.3 Intermediate Schools

This level of education serves children aged from twelve to fifteen years. Jizan province contains 107 boys' intermediate schools, or 7 per cent of the total intermediate schools in the country. The general average was one school to 4,823 inhabitants, a ration which was higher than the national average of about one school to 3,767 in 1984.

Table 7.7 illustrates that intermediate schools are distributed throughout the province as follows. The plains area predominates with 67 per cent of the total boys' schools and an average of one school to 4,985 inhabitants. The hilly area has 20 per cent of the total boys' intermediate schools and an average of one school to 5,078 inhabitants. Finally, the high mountains area contains 13 per cent of the total boys' intermediate schools, having an average of one school to 3,606 inhabitants.

Table 7.7 Distribution of Intermediate Schools in Jizan Province, 1988

Area	Boys' Schools		Girls' Schools	
	Number	Ratio to Popula'tn	Number	Ratio to Popula'tn
Plains Area	72	4,985	45	7,976
Hilly Area	21	5,078	4	26,662
Mountains Area	14	3,606	4	12,622
Total	107	4,822	53	9,735

Compiled from:

1. Population Estimation, 1980
2. Boys' and Girls' Education Offices in Jizan Province

The results of the nearest neighbour analysis with chosen significance level 0.01 (see table 7.8), reveal that the distribution of intermediate schools tends to be uniform in the province as a whole with an R-index of 1.34. However, there are variations in the R-index

within the provincial areas. In the plains area, the distribution of schools tends to be cluster with an R-index of 0.74, while in the hilly and mountain areas the distribution of schools tends to be dispersed.

Table 7.8 Results of Nearest Neighbour Analysis for Intermediate Schools of Jizan Province, 1988

Area	No. of Schools	Mean Observed Distance "ra"	Expected Mean Distance "re"	Nearest Neighbour Index "R"	One-tail test of randomness at ($\alpha=0.01$)
<u>Jizan Province</u>					
Boys' Schools	107	7.76	5.78	1.342	Reject
Girls' Schools	53	11.51	8.13	1.415	Reject
<u>Plains Area</u>					
Boys' Schools	72	4.30	5.75	0.747	Reject
Girls' Schools	45	8.67	7.24	1.197	Reject
<u>Hilly Area</u>					
Boys' Schools	21	9.72	5.63	1.726	Reject
Girls' Schools	4	24.21	12.98	1.865	Reject
<u>Mountain Area</u>					
Boys' School	14	9.64	5.40	1.785	Reject
Girls' School	4	16.49	9.72	1.696	Reject

It is obvious that most of the boys' intermediate schools are concentrated in the middle part of the plains area, particularly around the large urban centres of Jizan, Abu Arish, Sametah, Sabya, and Baish (see fig.7.1). The field survey (see table 7.9) illustrates that all the sample villages of the area such as Al Asamilah, Al Horjah, and Al Hatan, are provided with intermediate schools, while in the marginal plains area (as the case of the south-west around the villages of Al Arjain and Al Baisri and the northern part around Al Hajanbah, as well

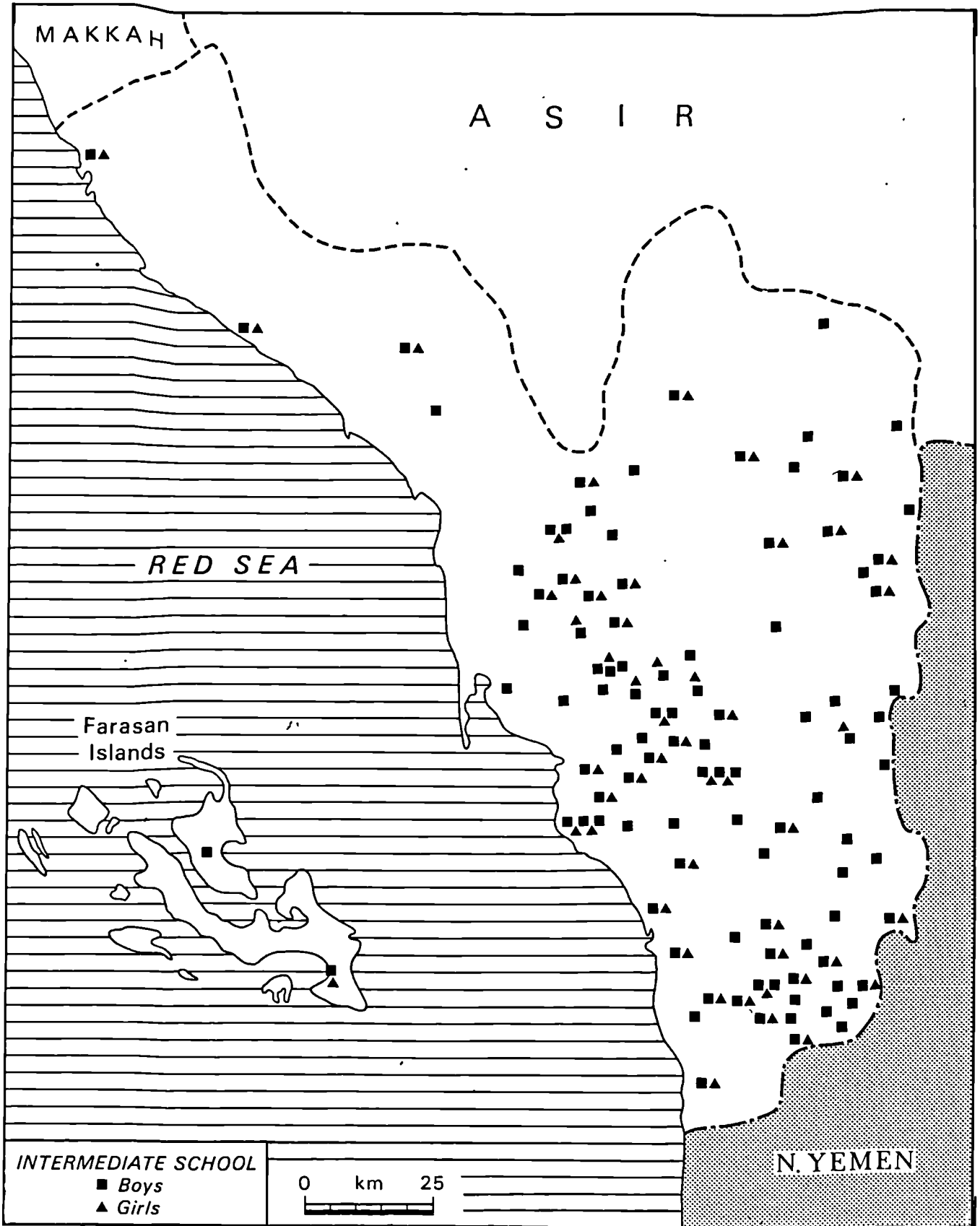


Fig.7.1 Distribution of Intermediate Schools in the Province in 1988

as the hilly and mountain areas around the villages of Sirrain and Rohan), students have to travel long distances to reach intermediate schools.

Table 7.9 Distance of Respondents to the Boys' Intermediate Schools, 1989

Villages	Nearest School	No. of Respondents	%	Distance
Al Arjain	Al Mussam	9	7.3	13
Al Baisri	Dihamah	8	6.5	7
*Al Asamilah	Al Asamilah	15	12.2	-
*Al Harjah	Al Harjah	14	11.4	-
Al Hajanbah	Ash Shuqaiq	8	6.5	11
Gawa	Al Khawbah	13	10.6	3
*Al Juwwah	Al Juwwah	18	14.6	-
Sirrain	Al Kudmi	11	8.9	17
Rohan	Ad Dyer	6	4.9	14
*Khashir	Khashir	8	6.5	-
*Al Hatan	Al Hatan	13	10.6	-

*Villages provided with schools

Source: Fieldwork, 1989

When we look at girls' intermediate schools, we find that the situation is one of severe deprivation. The variation in provision is much wider than for boys' schools. The province contains 53 schools, or 6 per cent of the total intermediate schools in the kingdom. The ratio of schools to population in the province was one school to 9,735 inhabitants, while the national ratio was one school to 9,283 inhabitants. The distribution of schools in the province consisted to 45 girls' intermediate schools, (85 per cent of the total schools) located in the plains area. The average here is one school to 7,976 inhabitants. The hilly area has only 7.5 per cent of the total girls' intermediate schools in the province with an average of one school to

26,662 inhabitants. Finally, the high mountains area contains 7.5 per cent of girls' intermediate schools with a ratio of one school to 12,622 inhabitants.

The results of the nearest neighbour analysis for girls' intermediate schools (see table 7.8) reveal that the distribution tends to be one of dispersion for the province as a whole, but within the provincial areas, there are wide variations between the plains area, where the R-index for the schools' distribution tends to be close to random, and in the hilly and mountains areas, where the distribution tends towards dispersion.

Actually, the scarcity of girls' intermediate schools has forced many students to travel to school over a considerable distance. The available data (as shown in table 7.10) indicates that 457 (or 9 per cent) of intermediate girl students travel outside their villages, 18.8 per cent of these travel up to 4 km, 30 per cent travel between 5 and 9 km, a further 37 per cent travel between 10 and 14 km, and 14.2 per cent travel more than 15 km.

Table 7.10 Distances Travelled by Girls to Intermediate Schools, 1988

Distances in km	No. of Students	%	Cummulative %
0-4	86	18.8	18.8
5-9	137	30.0	48.8
10-14	169	37.0	85.8
> 15	65	14.2	100
Total	457	100	-

Source: Girls' Education Office in Jizan Province, 1988

The villages studied confirm the inaccessibility of girls' intermediate schools in the province. Table 7.11 illustrates that only one village, from which 6.5 per cent of the respondents came, was provided with an intermediate school. The rural population of the remaining villages have to travel to reach the girls' intermediate schools. 21.2 per cent of the respondents have to travel up to 10 km as is the case of the rural population in the villages of Al Hatan and Gawa. About 60 per cent of respondents have to travel between 10 and 20 km as shown in the case of the people of Al Arjain, Al Asamilah, Al Harjah, Al Hajanbah, Al Juwvah, and Rohan. 15.3 per cent of respondents have to travel more than 20 km as is the case of the rural populations of Sirrain and Al Baisri.

Table 7.9 Distance of Respondents from Girls' Intermediate Schools, 1989

Villages	Nearest School	No. of Respondents	%	Distance
Al Arjain	Al Mussam	9	7.3	13
Al Baisri	Al Jaradiah	8	6.5	7
Al Asamilah	Ab Arish	15	12.2	15
Al Harjah	Dahamad	14	11.4	13
Al Hajanbah	Ash Shuqaiq	8	6.5	11
Gawa	Al Khawbah	13	10.6	3
Al Juwvah	Al Aridah	18	14.6	17
Sirrain	Al Hussini	11	8.9	25
Rohan	Ad Dyer	6	4.9	14
* Khashir	Khashir	8	6.5	-
Al Hatan	Baish	13	10.6	9
Total		123	100	-

*Villages provided with schools

Source: Fieldwork, 1989

It should be noted that on account of these long distances of

enforced travel, many girl students stay at home or they sometimes leave home in order to stay with relatives in town in order to complete their education. Generally, most of the remote rural areas are inaccessible to the present provision of intermediate schools both for boys' and girls'.

Secondary Schools

This level of education serves students in the age range from fifteen to eighteen years old. Considering boys' secondary schools, Jizan province had 23 schools in 1988, or 4 per cent of the total boys' secondary schools in the kingdom. The ratio of schools to population was one school to 22,434 in 1988. This ratio was much higher than the national average which was about one school to 18,567 inhabitants.

Boys' secondary schools are distributed in the province as follows (see table 7.12), 19 schools, or 83 per cent of the secondary schools, are located in the plains area. The average here is one school to 18,890 inhabitants. Both hilly and mountainous areas have a lower proportion of secondary schools, i.e. 17 per cent of the total secondary schools. The ratio of schools to population in the hilly area is very high, i.e. one school to 53,324 inhabitants; and one school to 25,244 inhabitants in the high mountains. The nearest neighbour analysis of the boys' secondary schools (see table 7.13) produced an index of 1.59. It is apparent that the tendency of the schools' distribution is toward dispersion with an average intervening distance of about 19 km. Indeed, this reflects the low number of schools in the province (see fig.7.2).

Table 7.12 Distribution of Secondary Schools in the Province, 1988

Area	Boys' Schools		Girls' Schools	
	Number	Ratio to Popula'tn	Number	Ratio to Popula'tn
Plains Area	19	18,890	14	20,672
Hilly Area	2	53,324	-	-
Mountains Area	2	25,244	1	50,488
Total	23	22,434	15	34,404

Compiled from: 1. Population Estimation, 1980
 2. Boys' and Girls' Education Offices in Jizan Province

The inadequate distribution of boys' secondary schools has forced students either to travel long distances to reach their schools, or to move to the towns. The available data indicates that in 1988, there were 2,993 students, or 41 per cent of secondary students, travelling from villages to towns to reach secondary schools. Table 7.14 shows that 10 per cent of these travel up to 4 km, 28.2 per cent travel between 5 and 9 km, 15.8 per cent have to travel between 10 and 14 km. A further 25.2 per cent have to travel between 15 and 19 km and 20.8 per cent have to travel more than 20 km. Thus, a high proportion of students (61.8 per cent) travel more than 10 km, as in the case of the coastal, hilly, and mountainous areas.

Table 7.13 Results of Nearest Neighbour Analysis for Secondary Schools in Jizan Province

Level of Education	No. of Schools	Mean Observed Distance "ra"	Expected Mean Distance "re"	Nearest Neighbour Index "R"	One-tail test of randomness at ($\alpha=0.01$)
Boys' Secondary	23	19.65	12.35	1.59	Reject
Girls' Secondary	15	21.23	15.38	1.38	Reject

Table 7.14 Distances Travelled by Male Students to Secondary Schools, 1988

Distances in km	No of Students	%	Cummulative %
0-4	124	10.0	10.0
5-9	349	28.2	38.2
10-14	196	15.8	54.0
15-19	312	25.2	79.2
> 20	258	20.8	100.0
Total	1239	100	-

Source: Boys' Education Office in Jizan Province

The village survey (table 7.15) confirms the inadequate distribution of boys' secondary schools in the province where a high proportion of the rural population are not within easy access to this level of education. Only 21.12 per cent of respondents are at distances of less than 10 km, as is the case of the rural population around the villages of Al Hatan and Gawa. 63.4 per cent of respondents are between 10 and 20 km away, as in the case of Al Arjain, Al Asamilah, Al Harjah, Al Hajanbah, Al Juwvah, Rohan, and Khashir.

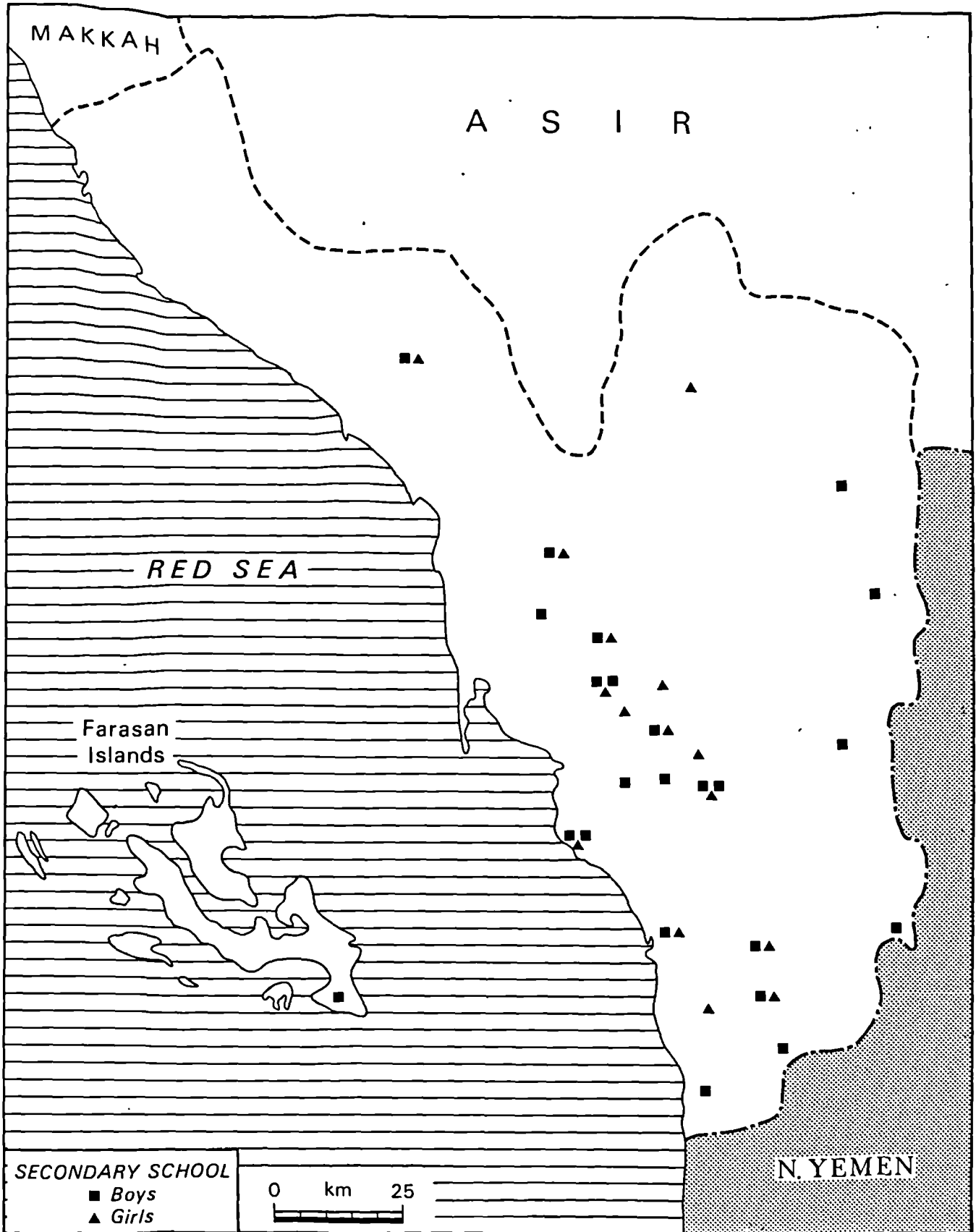


Fig:7.2 Distribution of Secondary Schools in the Province in 1988

Furthermore, 15.4 per cent of respondents are more than 20 km away, as in the case of the rural population around the villages of Al Baisri and Sirrain. That means more than 78 per cent of respondents are more than 10 km away, which reflects the low number of boys' secondary schools in the province in general, and particularly in the rural coastal and mountain areas.

Table 7.15 Distance of Respondents from Boys' Secondary Schools, 1989

Villages	Nearest School	No. of Respondents	%	Distance
Al Arjain	Al Mussam	9	7.3	13
Al Baisri	Sametah	8	6.5	25
Al Asamilah	Ab Arish	15	12.2	15
Al Harjah	Dahamad	14	11.4	13
Al Hajanbah	Ad Darb	8	6.5	19
Gawa	Al Khawbah	13	10.6	3
Al Juwwah	Al Aridah	18	14.6	17
Sirrain	Al Hussini	11	8.9	25
Rohan	Ad Dyer	6	4.9	12
Khashir	Ad Dyer	8	6.5	14
Al Hatan	Baish	13	10.6	9
Total		123	100	-

Source: Fieldwork, 1989

The want of girls' secondary schools is even more severe. The province contained 15 girls' secondary schools in 1988, or 3.6 per cent of the total girls' secondary schools in the country. Actually, there was a wide variation between the provincial ratio of one school to about 34,404 inhabitants and the national ratio which was about one school to 19,277 inhabitants. Table 7.12 shows that girls' secondary schools are distributed in the province as follows. The plains area is again dominant with 14 schools, or 93 per cent of the total schools in

the province, i.e. an average of one school to 25,637 inhabitants. In the hilly area, however, with 34 per cent of the total villages in the province and 19 per cent of the total population, there is as yet, no secondary school for girls. The mountain area has only one school with a total of 101 villages. This has actually forced female students to travel to major towns to benefit from secondary schools. The available data shows that 8 per cent of female secondary students come from rural villages. Table 7.16 shows that 14 per cent of these travel up to 9 km, 53 per cent have to travel between 10 and 19 km, while a further 33 per cent travel more than 20 km.

Table 7.16 Distances Travelled by Female Students to Secondary Schools, 1988

Distances in km	No. of Students	%	Cummulative %
0-9	21	14	14
10-19	79	53	67
> 20	49	33	100
Total	149	100	-

Source: Girls' Education Office in Jizan Province, 1988

An analysis of the pattern of girls' secondary schools in the province using the nearest neighbour analysis (see table 7.13) gives an index of 1.38, which indicates a dispersion pattern of distribution with an average distance of about 21 km. In fact, there is a wide discrepancy in the provision, with a high concentration in the middle part of the plains areas while the coastal, hilly, and mountain areas are quite unprovided with these schools (see fig.7.2).

The sample of villages (see table 7.17) shows that only 10.6 per

cent of respondents are less than 10.6 km away, as is the case of the rural population around the village of Al Hatan. Thirty per cent of respondents are between 10 and 20 km away, as in the case of the population around the villages of Al Asamilah, Al Harjah, and Al Hajanban, while the highest proportion (59.3 per cent) of respondents are more than 20 km away.

Clearly, the distribution of girls' secondary schools is not satisfactory in that they are virtually all inaccessible to the majority of the rural population who live in remote villages far away from urban centres.

Table 7.17 Distance of Respondents from Girls' Secondary Schools, according to respondents, 1989

Villages	Nearest School	No. of Respondents	%	Distance
Al Arjain	Sametah	9	7.3	43
Al Baisri	Sametah	8	6.5	25
Al Asamilah	Abu Arish	15	12.2	15
Al Harjah	Dahamad	14	11.4	13
Al Hajanbah	Ad Darb	8	6.5	19
Gawa	Al Ahad	13	10.6	34
Al Juwah	Abu Arish	18	14.6	42
Sirrain	Al Hussini	11	8.9	25
Rohan	Sabya	6	4.9	81
Khashir	Sabya	8	6.5	75
Al Hatan	Baish	13	0.6	9

Source: Fieldwork, 1989

In addition, there are three female teacher training institutes, all of them located in the major urban centres of Jizan town, Sabya and Sametah towns. In terms of higher education, there is no university in the province, but there are two teaching colleges, one for men located

in Abu Arish town and the other for women located in Sabya town. Therefore, most students beyond the secondary level leave for the major towns outside the province in order to pursue their higher education.

Nevertheless, the branches of the Ministry of Education and the General Presidency of Girls' Education offices in Jizan province work strongly toward a better distribution of schools in remote rural areas. However, the majority of the rural population still suffer from the problems of inaccessibility of education services, particularly post-primary schools. Moreover, rural education is also suffering from the combination of education levels in *one school*. It is *very common* to find two levels of education in one small school without basic facilities such as an electricity supply. In rural areas, most schools are rented, and only 30 per cent of the total schools are government-owned and purpose-built premises.

Another aspect of rural education problems is the lack of nursery schools. There are only 5 nursery schools in the province and they are all located in the major urban centres of Jizan town, Sabya and Abu Arish. Thus rural areas are deprived of this education facility, which is so important for the early development of children.

Another problem of rural education, not only in Jizan province but also in most developing countries, is that it is not relevant to rural population needs. Therefore, it is unable to help in aspects of rural development and many young people have left for the major urban centres in order to obtain better jobs. Todaro (1985, p272) points out that:

Major groups with important rural training needs such as out-of-school children and youths, women and small subsistence farmers are largely neglected by organized education programmes, both formal and informal. As a result, much of the primary education in rural communities of developing nations contributes little to improve levels of agricultural productivity or toward assisting the student to function more effectively in his or her rural community.

So, for example, while the province is distinguished by a high potential in agricultural development and a high density of rural population, notwithstanding there is no agricultural institute or any agricultural education in general. A strategy that might be adopted for the distribution of schools and promotion of rural agricultural education will be discussed when we come to look at the role of small towns as vital centres for rural development in Jizan province.

7.3 Distribution of Health Services

· The achieving of any growth in production and national income with an average that surpasses that of population increases is geared to the human effort of individuals. The possibility of such an achievement can be enhanced by providing people with health protection and immunity against diseases. Therefore, in order to protect them from diseases and to offer them a good standard of living, health services should be distributed to the majority of people who actually depend on the local economy.

Health services in Saudi Arabia are provided free, however, because Jizan province is a rural area, detached from the great urban development centres, its public health facilities have remained relatively underdeveloped. Therefore, health care provision in the

province, like education, has been developed very recently, in accordance with the strong commitment of the government to distribute health services to all inhabitants throughout the whole country. However, rural areas of the province are poorly served compared with the level of health facilities not only in urban areas, but also in the rest of the country. Indeed, the southern region as an agricultural area is still suffering from inadequate health facilities. Al-Kahtani (1988, p245) points out that "the infant mortality rate of 100 or more per 1000 live births is an indication of poor health facilities."

In Jizan province, the majority of the population live in rural areas, and health care development does not amount to a level capable of meeting local needs. Clearly, there is a wide divergence between the levels of health in urban and rural areas. In the plains area, particularly around the major urban centres, where the population enjoys better education facilities, they also have better health services, while the remote rural areas' health services are inadequate not only in terms of medical services, but also in respect of problems of polluted water, malnutrition and contagious diseases.

Table 7.18 indicates that urban areas, with about 33 per cent of the province's population, have 71 per cent of the total physicians, 75 per cent of the total nurses, and 71 per cent of the total technical assistants. On the other hand, the rural areas, with a high proportion of the population, have a more slender proportion of these facilities. The following discussion focuses on the distribution of health services in the province. These health services are distinguished by hospitals in the major urban centres, and primary health care centres in some

villages.

Table 7.18 Distribution of Health Staff between Rural and Urban Areas in Jizan Province, 1988

	Urban	%	Rural	%	Total
Physicians	492	70.7	204	29.3	696
Nurses	1337	74.9	449	25.1	1786
Technical Assistants	705	71.0	288	29	993
Total	2534	73	941	27	3475

Source: Ministry of Health, Annual Report, 1988

7.3.1 Distribution of Hospitals

Hospitals are a distinctively urban service. There are eleven hospitals in the province, or 7 per cent of the total hospitals in the country, eight of which are small general hospitals and one a central hospital. In addition, there are two hospitals for psychiatry and thorax diseases. These hospitals contain 6 per cent of the total beds and 5.8 per cent of the total physicians in the whole country. The distribution of hospitals in the province is shown in table 7.19. It can be seen that the ratio of hospitals to population was very high, there being one hospital to about 46,919 inhabitants, while the national average was about one hospital to 40,095 inhabitants. Moreover, the ratio of beds to population was high, there being one bed to 452 persons while the national average was one bed to 308 inhabitants. The table also indicates the wide variation in the distribution of hospitals in the province. The plains area, particularly the major urban centres, dominate with 91 per cent of the

total hospitals and 96 per cent of the total beds in the province. Seven of the hospitals, or 63 per cent, are concentrated in the urban triangle of Jizan, Abu Arish, and Sabya, where 82 per cent of the total beds are similarly concentrated (see fig.7.5). Outside this triangle, there are Baish Hospital in the northern part with 50 beds, Sametah Hospital in the southern part with 110 beds, Fayfa Hospital in the mountains area with 50 beds, and finally Farasan hospital in the Farasan Islands with 50 beds. Indeed, the hilly area, with about 15 per cent of the total population and 34 per cent of total villages, has no hospitals. This reflects the circumstance that hospitals are urban services to which the majority of the rural population has less access.

Table 7.19 Distribution of Hospitals and Beds in Jizan Province, 1988

Area	No of Hospitals	No.of beds	Ratio of hospitals to Population	Ratio of beds to Population
Plains Area	10	1091	1:39108	1:358
Hilly Area	-	-	-	-
Mountains Area	1	50	1:47828	1:946
Total	11	1141	1:46919	1:452

Source: Compiled from Ministry of Health, Annual Report, 1988 and Serate's Population Estimation, 1980

In order to measure the spatial distribution of hospitals in the province, a nearest neighbour analysis was carried out. This technique gives the manner and degree to which the distribution of hospitals departs from that of a random distribution. The nearest neighbour

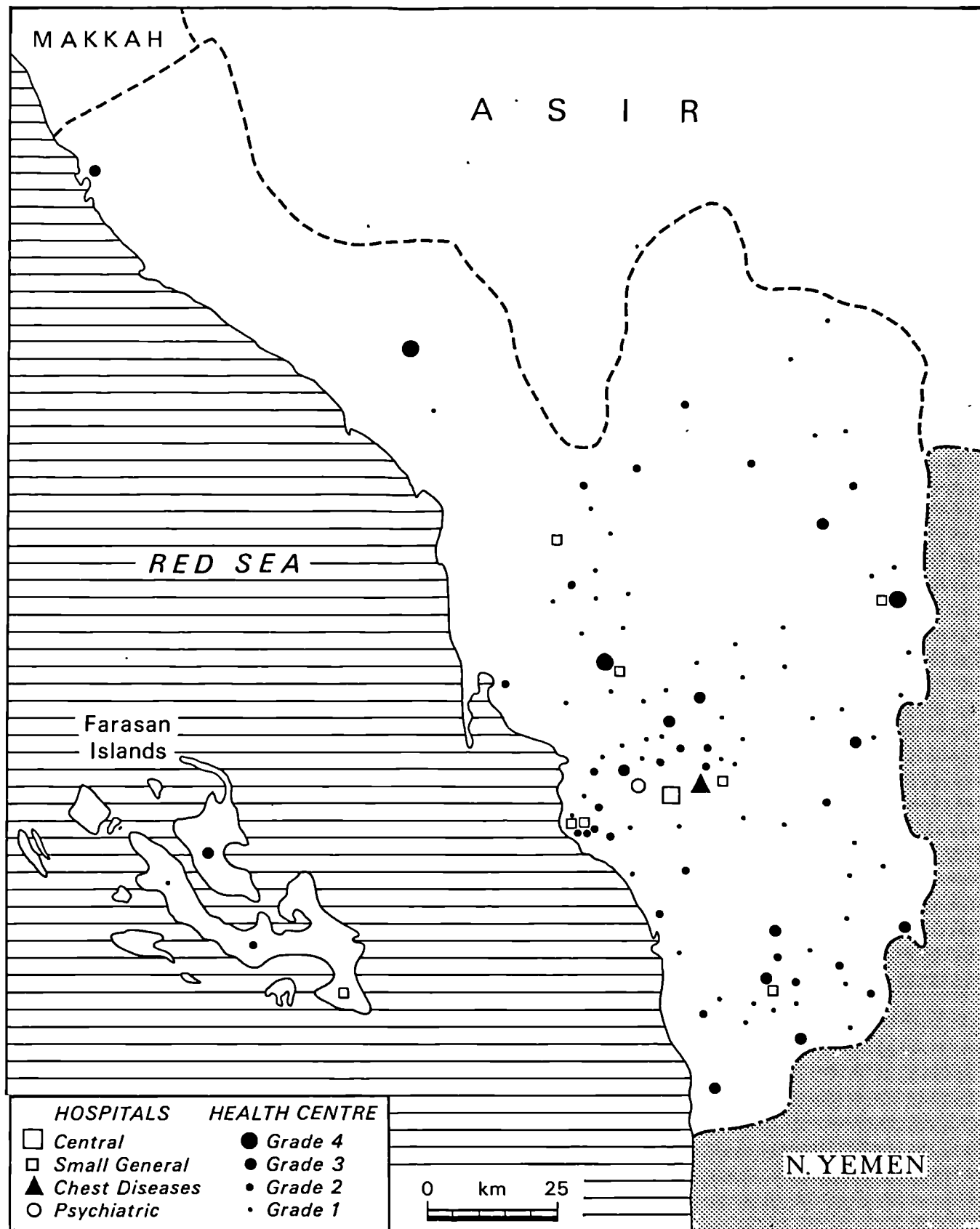


Fig.7.3 Distribution of Hospitals and Health Centres in the Province in 1988

analysis of the 10 hospitals produced an index of 0.81, which reveals that the distribution is of the cluster pattern suggesting that the hospitals are not well distributed in the province.

Obviously, the medical treatment offered by these hospitals is not easily accessible to people of remote rural areas such as those living in the southern and northern parts of the plains and those living in the hilly and mountainous areas. The study villages (see table 7.20 and Fig.7.4) show that 24.4 per cent of respondents travel to Sametah Hospital more than 30 km away. This hospital has 110 beds and 43 physicians and it serves seven emirates with a total of 203 villages and an approximate population of 136110 inhabitants. This means that the ratio is one bed per 1,237 persons. Hence, we notice the inefficiency of the hospital facilities in this part, since a large number of patients come to this hospital from the emirates of Al Khawbah and As Salb in the hilly area which are both more than 40 km from the hospital site. The same applies to the emirates of Al Mussam and Dihamah, which are at similar distances.

The rural population in the northern part of the province go to Baish and Sabya Hospitals. 17.1 per cent of respondents go to Sabya Hospital and 21 per cent go to Baish Hospital. These hospitals have 85 physicians and 177 beds and they serve eleven emirates with a total of 242 villages and approximately 138,134 inhabitants. Therefore, the average is one bed for 780 persons. Patients from the emirates of Ash Shuqaiq, Al Qyahama, and Ad Darb drive more than 60 km to reach these hospitals as do the patients from the emirates of Ar Rith, Al Haqu and Al Kudmi.

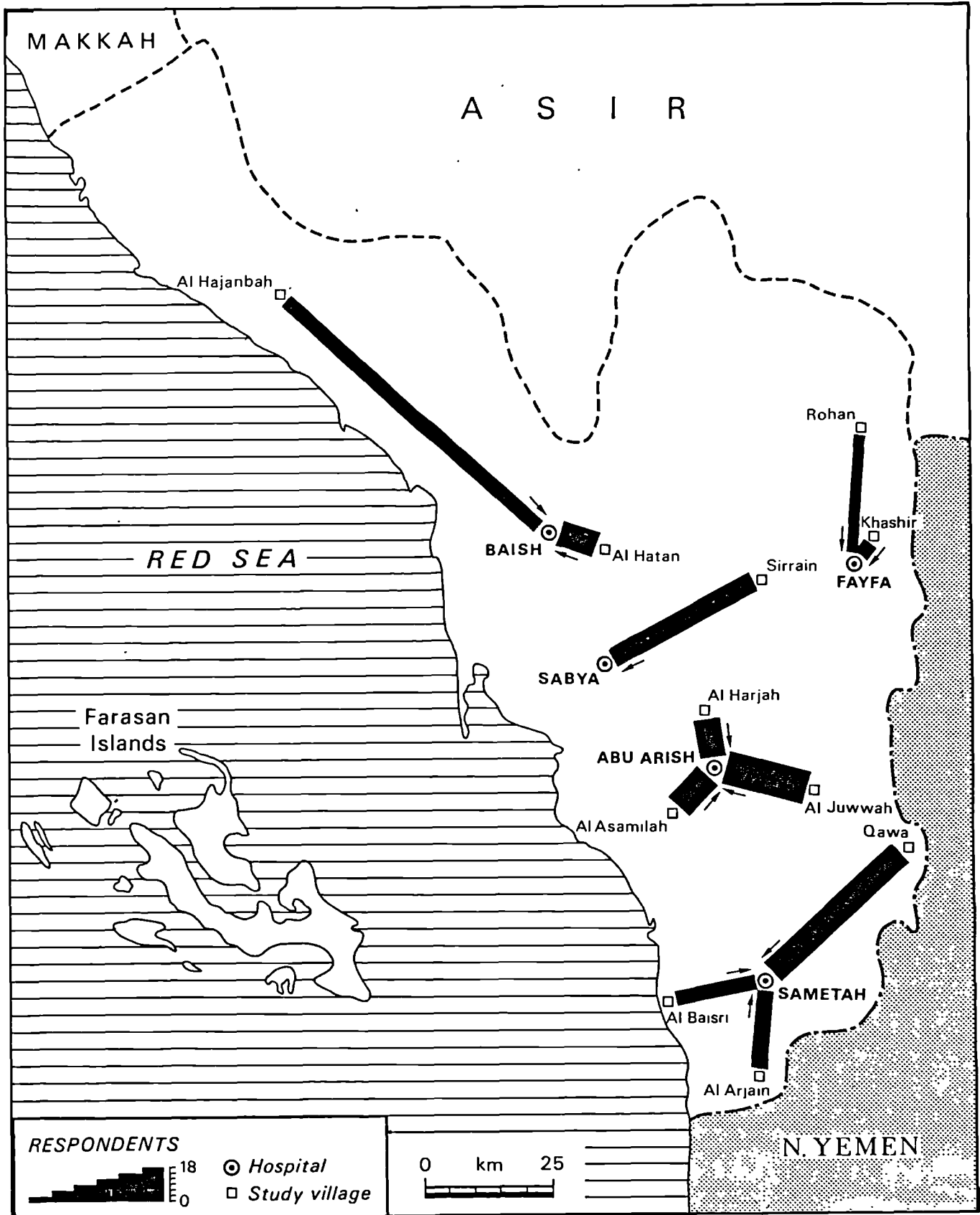


Fig.7.4 Travel by Respondents for Hospital Services in 1989

Source: Based on table 7.20

The hilly and mountainous areas are actually in the poorest parts in terms of hospital provision as there is only one hospital in the town of Fayfa and this has only 20 physicians and 50 beds. This hospital serves eleven emirates with 219 villages and an approximate population of 72,442 inhabitants. Therefore, the ratio here is one bed per 1,449 persons. The field study shows that 11.4 per cent of the respondents travel to this hospital from about 27 km away. However, the rural population in the hilly areas, e.g. the inhabitants of Al Juwwah village in the emirate of Al Aridah, travel about 42 km to reach Ab^uArish hospital. Clearly in this area access to the hospitals is more difficult on account of the poor roads which are generally in bad states of disrepair. The consequence is that emergency cases cannot reach the hospital within a reasonable time.

On the other hand, the inhabitants of villages in the middle part of the plains area, particularly around Ab Arish and Jizan towns, have to travel only short distances to reach hospital services as in the case of Al Asamilah and Al Harjah villages. Undoubtedly, Jizan and Abu Arish towns have attracted a large number of hospitals, ie. 54 per cent of the total hospitals and 68 per cent of the total beds which are concentrated here. The ratio here is much lower than in any other part of the province, ie. one bed per 223 persons. This highlights the wide difference in hospital distribution between the urban and rural areas, a variation which can be seen in the high concentration of hospitals in the major urban centres, while the small towns and rural areas, where the majority of the rural population live, are the most deprived areas in terms of hospital services.

Table 7.20 Distance of Respondents from the Nearest Hospital Services, 1989

Village	Nearest Hospital	No of Respondents	%	Distances in km
Al Arjain	Sametah	9	7.3	43
Al Baisri	Sametah	8	6.5	24
Al Asamilah	King Fahad	15	12.2	15
Al Harjah	Ab ^u Arish	14	11.4	18
Al Hatan	Baish	13	10.6	9
Al Hajanbah	Baish	8	6.5	47
Gawa	Sametah	13	10.6	46
Al Juwwah	Ab Arish	18	14.6	42
Sirrain	Sabya	11	8.9	31
Khashir	Fayfa	8	6.5	21
Rohan	Fayfa	6	4.9	27
Total		123	100	-

Source: Fieldwork, 1989

7.3.2 Distribution of Primary Health Care Centres

Other health facilities available in the province are primary health centres. This service falls into four categories in terms of room numbers, laboratories, radiology units, and personnel. Category one contains a nurse and a worker; category two contains a radiology unit, a laboratory, a nurse and a physician; category three contains the above plus specialist doctors; and category four acts as a small hospital.

Fig.7.3 shows that in 1988 the province had 104 health centres, or 7 per cent of the total primary health care centres in the whole of the country, 62 of which are category one, 27 category two, 12 category three and 3 category four. These health centres contain only 29 per

cent of the total physicians in the province, with an average of 1.9 physicians per centre.

Table 7.21 illustrates the distribution of health centres in the province and it is apparent that the average was one primary health care centre per 4,962 inhabitants, while the national average was one health care centre to 3,076 inhabitants. However, there is a wide variation throughout the province. The plains area dominates with 78 per cent of the total primary health care centres in the province and an average of 1 health care centre per 4,431 persons. The table also shows that the plains area dominates with 79 per cent of the total grade one health care centres, 81 per cent of the total grade two, 67 per cent of the total grade three, and 67 per cent of the total grade four.

The hilly area has 14 per cent of the total health care centres: 11 per cent of the total grade one health care centres, 15 per cent of the total grade two, 33 per cent of the total grade three, but none of the grade four. In this area the average is one health care centre per 7,109 persons.

The high mountains area has only 8 per cent of the total health care centres in the province: 10 per cent of the total grade one health care centres, 4 per cent of the total grade two, and 3 per cent of the total grade four, but none of the grade three. The average is one centre per 6,311 persons.

Table 7.21 Distribution of Primary Health Care Centres in the Province, 1988

Area	Gr.1	%	Gr.2	%	Gr.3	%	Gr.4	%	Total	%	Ratio to Popul'n
Plains	49	79	22	81	8	67	2	67	81	78	1:4431
Hilly	7	11	4	15	4	33	-	0	15	14	1:7109
Mountain	6	10	1	4	-	0	1	33	8	8	1:6311
Totals	62	100	27	100	12	100	3	100	104	100	1:4962

Source: Jizan Province Health Headquarters, 1988 and Village Survey, 1983

In order to measure the spatial pattern of primary health care centres in the province, a nearest neighbour analysis was carried out. The results of the analysis (table 7.22) reveal that the distribution is random for the province as a whole, with an R index value of 1.06. There is a variation in the R index amongst the physical areas in the province. It is apparent that the tendency of R value in the plains area is toward randomness with an R value of 0.933 and average distance of about 4 km. This in fact reflects the concentration of most of the health care centres in the plains area. In the hilly and mountain areas the R value tends toward dispersion, (i.e. 1.628 and 2.053) with average distances of 11 and 17 km respectively. This also reveals that these areas have a low number of primary health care centres, particularly in the high mountains.

Table 7.22 Results of Nearest Neighbour Analysis for Primary Health care centres in Jizan Province, 1988

Area	No. of Primary Health	Mean Observed Distance	Expected Mean Distance	NN Statistic R	One-tail test of randomness at ($\alpha=0.01$)
Jizan Province	104	6.19	5.81	1.06	Accept
Plains Area	81	4.22	4.52	0.93	Accept
Hilly Area	15	10.93	6.71	1.63	Reject
Mountain Area	8	17.25	8.4	2.05	Reject

It is apparent from fig.7.3 that most of the primary health care

centres are concentrated in the plains area, particularly around the major urban centres of Baish, Sabya, Jizan, Abu Arish, and Sametah.

The sample villages survey (table 7.23) shows that four villages, (namely Al Asamilah, Al Hatan, Al Juwwah and Khashir) with 44 per cent of respondents, are provided with primary health care services. Seventeen per cent of respondents have to travel up to 10 km, as in the case of residents of Al Baisri and Gawa villages. A further 30 per cent of respondents have to travel between 11 and 14 km, as in the case of the population of Al Arjain, Al Hajanbah, Al Harjah, and Rohan. Finally, 9 per cent of respondents have to travel more than 15 km, as in the case of Sirrain which is the furthest sited from the primary health care services.

Table 7.23 Distance of Respondents from Nearest Health Care Centres, 1989

Village	Nearest Health Care Centre	No of Respondents	%	Distances in km
Al Arjain	Al Mussam	9	7.3	13
Al Baisri	As Shui	8	6.5	6
*Al Asamilah	Al Asamilah	15	12.2	-
Al Harjah	Dahamad	14	11.4	13
*Al Hatan	Al Hatan	13	10.6	-
Al Hajanbah	As Shuqaiq	8	6.5	11
Gawa	Al Khawbah	13	10.6	3
*Al Juwwah	Al Juwwah	18	14.6	-
Sirrain	Al Kudmi	11	8.9	17
*Khashir	Khashir	8	6.5	-
Rohan	Ad Dyer	6	4.9	14

* Villages provided with health care centres

Source: Fieldwork, 1989

In actual fact, the efficiency of medical services is hampered because of the shortage of doctors and well-trained medical personnel. Even though more than 65 per cent of the population live in small towns and rural settlements, nevertheless the rural areas have only 29.3 per cent of the total physicians in the province. The consequence is that the work loads in rural areas are much higher than they are in urban areas, and practitioners see far more patients. Table 7.24 shows that there is a shortage of doctors in both general and specialist practices in the rural areas compared with the ratio in urban areas.

Table 7.24 Ratio of Doctors to Population in the Province

	Ratio of general practitioners to population	Ratio of medical specialists to population
Jizan Province	1:743	1:1360
Urban Areas	1:982	1:646
Rural Areas	1:1233	1:9045

Source: Compiled from Jizan Health Office Headquarters and Serate's Population Estimation for 1985

Coupled with severe shortages of doctors in the rural areas is the lack of prophylactic measures which are particularly important in these remote areas. Moreover, maternity care units are simply non-existent in the rural areas and these areas also suffer from scarcity of healthy water supplies, refuse disposal services, and sewage systems.

From the above discussion it is clear that the people of the province's rural areas, particularly those living in remote villages, still suffer from a shortage of health services and most of them face the problem of difficult access to hospital services. Therefore, in order to provide health services closer to the majority of the population in the province, it is important to develop provision of services to small towns and to provide infrastructural and transport services in order to make health care centres easier of access to the rural population.

7.4 Road Transport Problems

One established economic fact is that the success of any development plan depends primarily on the availability of some basic factors, the most important of which is a road network. A well-organized transport system and a good road network are vital for development since they create intensive interactions between dynamic (ie urban) and rural areas, an interaction deriving from the mobility of manpower, services, and products. In addition, these factors may help to promote specialized agricultural and industrial production and the ability to market products at the lowest possible cost. Moreover, good transport facilities lead to the integration of urban with rural communities, so that the villages are not so necessarily self-sufficient but may benefit from what is readily available in the urban centres.

Jizan province is served by three types of transport, i.e. air, sea, and land transport. Regarding air transport, the province has one

small airport at Jizan town. This air transport is playing an ever-increasing role although it is still limited to passenger transport. There are several flights per week between Jizan and the major cities in the country. For example, in 1987, 237,200 passengers passed through Jizan Airport, 48 per cent of them travelling to Jeddah and 42 per cent of them heading for Riyadh. This reflects the situation whereby most of the people who travel from Jizan area are actually employees in the main urban centres.

Jizan province also has an important port on the Red Sea which serves the whole of the southern part of the country. It is the centre of a brisk maritime trade with ports on the Saudi coast, as well as with ports on the opposite coast of the Red Sea. In 1987/88 the cargo unloaded in the port amounted to 564089 tons, 91 per cent of this being foodstuffs, such as rice and sugar. 7 per cent consisted of construction and building materials, and the remaining 2 per cent consisted of general goods. In fact, the extension of the port and airport facilities in the province roughly coincided with the network of asphalted roads in the area, not only in the province but also in the whole of the southern region. The following discussion will highlight the network of roads in Jizan province.

7.4.1 The Road Network in the Province

In Jizan province, road transport is particularly important because there are no opportunities for river or railway transport. Therefore, road transport must play a vital role in the movement of goods and services between urban and rural areas. However, until a few

years ago, the province was relatively backward and isolated from the dynamic urban centres in the middle regions of the country. Isolation from development has been exacerbated by the inadequate supply of paved rural roads. A socio-economic survey of villages in the kingdom (1984) shows that only 16.5 per cent of the total villages in the province were accessible by asphalted roads, 81.3 per cent of villages were still served only by sandy or clay tracks, and 3 per cent were served by footpaths. The rural population who live in coastal and mountain areas suffer from difficulties of access to economic and social services that are concentrated in the major urban centres. The degree to which the sub-emirate centres are integrated was examined by network connectivity measurement. The index of this measurement ranges from 0 which indicates unconnected nodes, and 1 which reveals maximally connected nodes. Regarding Jizan province, this index was found to be 25 per cent in 1989, which was a quarter of the maximum number of links. This, in fact, reflects inadequate spatial integration in the province.

Indeed, the improvement of roads in the province has not benefited the remote rural areas, for many rural towns and villages are still only served by earth tracks or dirt roads, which are difficult to travel along even in summer, and during the rainy and irrigation season, some villages are almost inaccessible since the roads cross over wadis. Therefore, it is only by long journeys over rough surfaced roads that passage is made between villages and urban centres. In some parts of the province, particularly in the coastal and mountain areas, communication distances reach as much as 60 km along unpaved roads.

7.4.2 Road Density and Distribution

As already noted, Jizan province is distinguished by a high potential for development, particularly in respect of agricultural development. Nevertheless, the province contains only a few paved roads. In 1987, the total length of paved roads was about 674 km, or about 2.2 per cent of the total paved roads in the country. This compares with Asir province, where in 1987, the total paved roads extended to about 2300 km or about 7 per cent of the total paved roads in the kingdom.

The paved roads density in the province is very low, about 0.05 km per sq.km. This indeed illustrates the fact that the province in general is suffering from a shortage of paved roads and consequent accessibility problems. Moreover, the distribution of paved roads within the province is also very uneven, since more than 70 per cent of the province area has less than 0.10 km per sq.km. Paved roads density per emirate has been derived by dividing the total of roads in each emirate by the area (in square km) of each emirate.

The result of the roads density analysis indicates that the high densities occur in the middle part of the plains area and that there is a decrease in density both in mountain and coastal areas. Fig.7.5 classifies the emirates of Jizan province into four areas:

Area 1 - With road density more than 0.15 km per sq.km. This constitutes about 14 per cent of the province area. Obviously, this high road density is centred in the middle part of the plains area

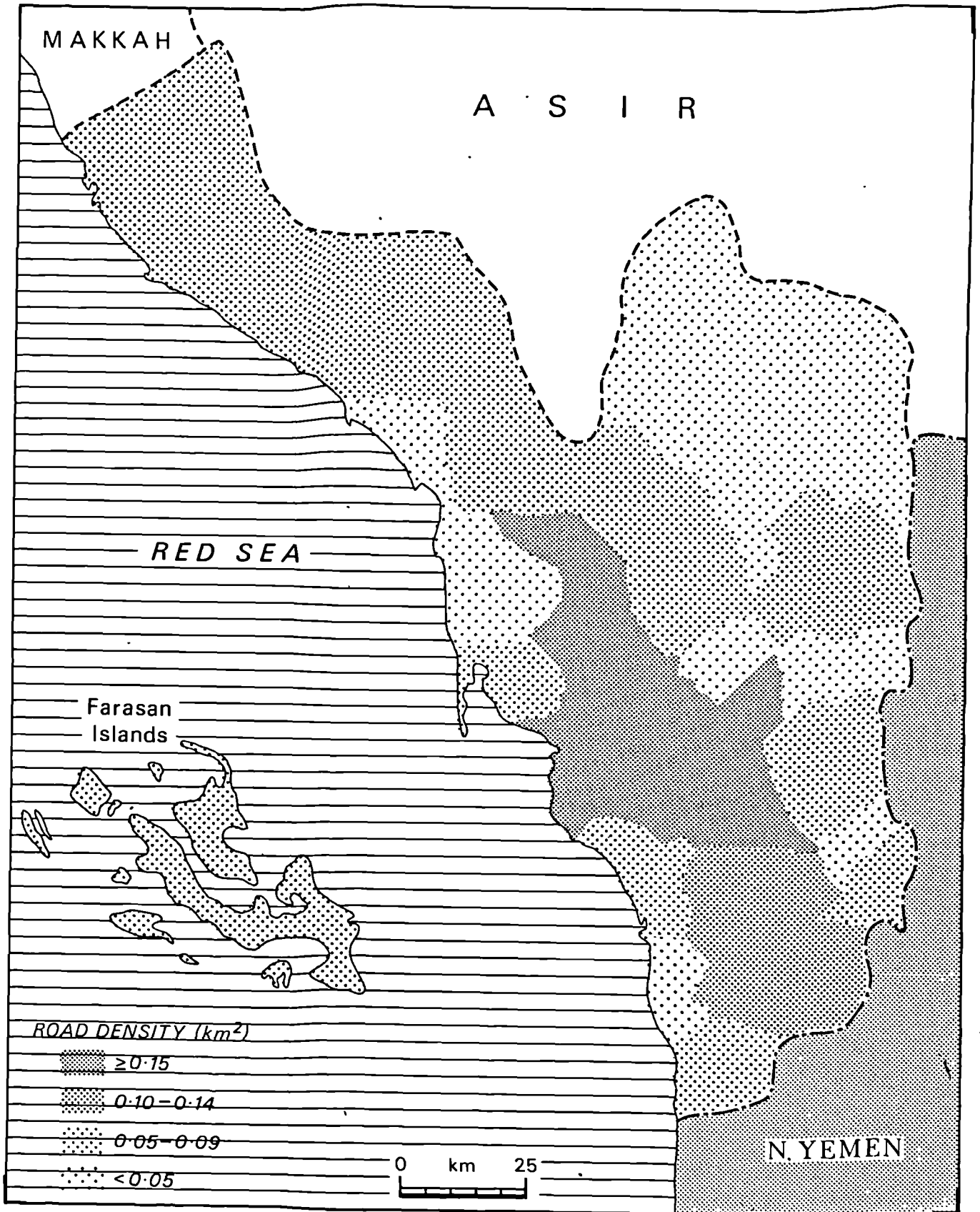


Fig.7.5 Road Density in Jizan Province in 1988

where the emirates of Baish, Sabya, Wadi Jizan, Abu Arish, and Dhamad are located. This area not only represents a high degree of urbanization, but also a high degree of commercialization and population growth in the province. The larger urban centres of Jizan, Sabya, Baish, and Abu Arish have the greatest concentration of economic and social activities which provide a major focal point for employment. Moreover, this area is also characterized by agricultural potential and accessibility to the airport and seaport where the passengers and goods come to the province.

Area 2 - This represents an area with road density between 0.10 and 0.14 km per sq.km. This area constitutes about 10 per cent of the area of the province and is centred mainly in the southern part of the province around the towns of Sametah, Al Ahad, and Al Tuwal. This area is also characterized by population density and rapidity of urbanization. This area, like the first one, shows a high degree of agricultural potential, as well as commercialization and urbanization which are reflected in the relative magnitude of the road density.

Area 3 - This includes an area with density between 0.05 and 0.09 km per sq.km. This area dominates about 46 per cent of the area of the province. It extends from the north-west of the province to the south-east, where the emirates of Al Qamah, Ash Shuqaiq, Ad Darb, Masliyah, Al Haqu, Al Kudmi, Iban, Ad Dyer, and Fayfa are distributed. It also includes the emirates of Al Qoz, Al Madhaya, and Al Mussam as well as the hilly emirates of Al Aridah, and Al Khawbah. In comparison with the above areas, this area is characterized by low levels of urbanization and development as well as low population density.

However, most of this area, such as the environs of Ad Darb, Al Haqu, Iban, Ad Dyer, Al Aridah, Al Khawbah, and Al Mussam has agricultural potential with a relatively high degree of population density. So, road development would enhance the productivity of this area.

Area 4 - With road density between 0.0 and 0.05 km per sq.km. This area constitutes about 23 per cent of the province area. Most of this area is concentrated in the mountain and coastal areas, where the environment is neither conducive to the congregation of a dense population nor to agricultural potential. Most of the people in this area depend on the traditional economic activity of cattle rearing. However, some emirates such as Harub, As Salb, and Ash Shuqairi are characterized by the availability of water and soil fertility which have produced suitable environments for agricultural production and population concentration.

Clearly the road density in the province reflects the urgent need for accelerated and more widespread road development. The distribution of existing roads confirms that many areas are not accessible by road. There is a concentration of roads in the middle part of the plains area where the high degree of population density and urbanization are evident. The existing road network in the province shown in fig.7.6 and table 7.25 can be classified into three types:-

1. Major paved roads that connect the province with other parts in the kingdom as well as with neighbouring states such as Yemen. The major paved roads in the province constitute about 289 km or 43 per cent of the total paved roads in the province. These main

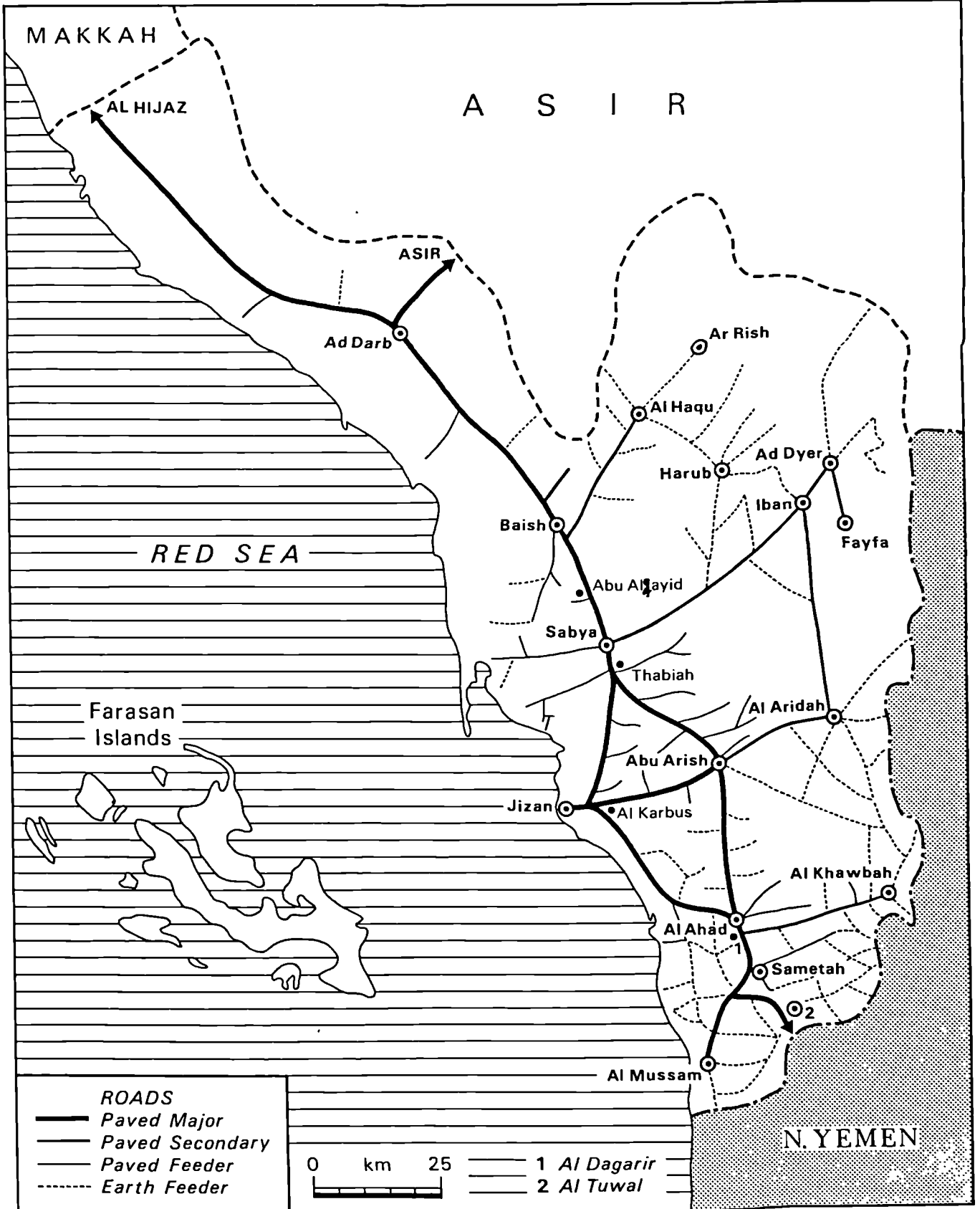


Fig.7.6 Existing Network Roads in the Province in 1988

roads, however, comprise a triangle linking the three major towns of Jizan, Abu Arish, and Sabya, a north-south transportation axis. To the northern part of the province near Ad Darb, the road divides into two branches, one stretching to link Jizan province with Asir province, particularly the main towns of the southern region (Abha and Khamis Mushayt). It also extends towards the north to make links with Taif, Makkah, and Jeddah. The importance of this road is that it links the two agricultural areas of Jizan and Asir. Moreover, this road is now used by travellers between Riyadh, the Eastern Provinces, and Yemen instead of the traditional southern road going through Wadi Dawasir and desert areas until reaching Khamis Mushayt town.

Recently this road has come to play an important role in terms of trade between Jizan and Asir provinces. It carries heavy lorries transporting many goods, including staff and construction and building materials from Jizan port to Asir province. Moreover, many lorries plying between Jizan and Asir are carrying cement from the southern cement factory near Al Ahad town located in the southern part of the province. In 1987, the total production of this factory was 1,897,658 tons, most of its production being transferred to Asir. On the other hand, the importance of this road is also observable in the supply of Asir province with Jizan's agricultural production, particularly vegetables during the winter and in the opposite way during the summer season.

A second major road links Jizan province with the regions of Hejaz. This road runs through flat coastal plains. Passenger traffic by car or taxi is probably the most important item in

this movement, since a great many people travel to visit the holy city of Makkah both from the province and from Yemen. The heaviest traffic therefore appears during the pilgrimage season.

The province is also linked with the Yemen Arab Republic by a new road passing through the towns of Al Ahad, Sametah, and Al Tuwal. It is clear that the lorry traffic plying between the major urban centres of the kingdom, where most of the Yemenis work, and Yemen passes through the province. Passenger traffic is the most obvious item in the movement from Yemen to Saudi Arabia, followed by livestock and vegetable produce.

The major provincial road network stretches from the north of the province to the south, passing through the plains area and connecting the major towns with other provinces in the country.

- This has a major effect on the development process in this area. Actually this road has played an important role from ancient times since it was the route taken by caravans travelling from Yemen to Hejaz. It was set out in accordance with its historical importance in such a way that it passes via old main towns where former caravanserais are ranged along the road. The paving of this road at the present time has benefited the major towns by connecting them with the dynamic urban centres and increasing their importance as places of most trade and economic activities in the province.

2. Secondary paved roads which provide links between sub-emirate centres and major towns, or with major roads. The total length

of these roads is about 226 km, or 33.5 per cent of the paved roads in the province. The most important of these roads are: (1) the one which links Baish town with Al Haqu emirate, extending over about 24 km; (2) the road that connects Sabya town with Ad Dyer and Fayfa, extending over 65 km; (3) the road which links Al Ahad with Al Khawbah sub-emirate centre extending over 34 km; (4) the road which links Abu Arish town with Al Ardah and Iban emirate centres extending over 47 km; and (5) the road which links Sabya town with Al Qoz emirate centre.

These roads provide good accessibility for the emirate centres, connecting them with major towns. However, the main problems of these roads are that they are concentrated in the plains area, particularly between the emirate towns located around urban centres. Moreover, these roads require feeder roads to connect the rural villages with urban and market places.

Table 7.25 Distribution of Paved Roads in the Province, 1988

Roads	Length in km	%
Major Roads	289	42.9
Secondary Roads	226	33.5
Feeder Roads	159	23.6
Total	674	100

Source: Compiled from Road Maps of Jizan Province, 1988

3. Feeder roads which are unfortunately few, the total length of

these roads being 159 km, or 23.6 per cent of the total paved roads in the province. It is obvious that these roads provide links between larger villages with major or secondary roads. At the present time, many rural villages in the province lack good vehicular access roads. The socio-economic survey made by Serate in 1979 also emphasizes this point.

Table 7.26, which illustrates the road accessibility of villages in 8 emirates belonging to the plains areas, shows that all the villages with over 2,000 inhabitants are connected by major roads. 45 per cent of the medium size villages, that range between 500 and 2,000 inhabitants are served by major roads, 35 per cent of these villages are served by secondary roads, and 20 per cent of them are served only by earth roads. The majority of small villages, i.e. 65 per cent, that range between 100 and 500 inhabitants, are still served by earth roads, although a small proportion of these villages are connected by paved roads. Finally, all the hamlets of less than 100 inhabitants are still only accessible by earth roads.

Indeed, the accessibility of villages in the plains areas seems far from satisfactory, and since this condition pertains to the dynamic area, the implication is that conditions outside the urban area are much worse, as indeed appears in the sample villages. Table 7.27 shows that 3 of the total sample villages, or 27.3 per cent, are connected by paved roads. All these villages are located in the plains area around urban centres where major and secondary roads are distributed, as is the case of Al Asamilah, Al Harjah, and Al Hajanbah.

The remaining plains villages that belong to the coastal area are not connected by paved roads but are accessible by dirt tracks, as in the case of the emirates of Al Mussam and Dihamah. Moreover, the villages of the hilly and mountainous areas are only accessible by dirt tracks which are very difficult to traverse, particularly during the rainy season, as is the case in the emirates of Al Khawbah, Al Aridah, Iban, Al Haqu, and Ad Dyer.

Table 7.26 Road Accessibility of Villages in the Plains Area (8 emirates), 1979

Class of Village by population	Major Roads %	Access by secondary roads %	Earth Roads %
Over 2000	100	0	0
500 - 2000	45	35	20
100, - 500	20	15	65
Less than 100	0	5	98

Source: Serate, Socio-Economic Survey, 1989

Moreover, according to the same socio-economic survey, in the plains area, 9.6 per cent of households own one or more cars, and the average is one vehicle for every 25 inhabitants, which indicates a very low standard. Therefore, since there is no public transport system whatsoever, rural inhabitants have to rely heavily on long-distance taxis or on alternative unorganized means such as a neighbour's car or an unregistered taxi, i.e. a private car used as a taxi, particularly on market days. The study of transport usage in the sample villages (see table 7.28) shows that 37.4 per cent of respondents travel by

their own cars, 31.7 per cent travel by taxi, a further 21.1 per cent travel with their friends or neighbours, and 9.8 per cent of respondents, particularly those in the hilly and mountainous areas, travel extensively on foot or use animals to reach market places. It is worth mentioning that the majority of vehicle owners use pick-ups or jeeps, which are suitable for difficult roads.

Table 7.27 Accessibility of Sample Villages in the Province, 1989

Areas	Villages served by paved roads	Villages served by earth or clay roads	Total
Plains Area	3	3	6
Hilly Area	-	3	3
Mountains Area	-	2	2
Total	3	8	11
%	27.3	72.7	100

Source: Fieldwork, 1989

Table 7.28 Means of Transport used by Respondents, 1989

Transport Type	Number of Respondents	%
Private car	46	37.4
Taxi	39	31.7
Friend's car	26	21.1
Others	12	9.8
Total	123	100

Source: Fieldwork, 1989

7.4.3 Factors Affecting Road Density

The road density in Jizan province reflects many factors of which three appear to be of great significance.

Physical Factors

The physical factors can be considered as important in terms of road development. As discussed in chapter 4, Jizan province is divided into three physiographical units: the plains, hilly, and mountain areas. The impression of physical units (see fig.4.3, chapter 4) and road density (see fig.7.5) reveals a clear variation in the functional relationship between the hostile environment and road density in the province.

. Obviously, areas of very steep slopes that belong to the hilly and mountain areas as well as the sandy coastal areas that belong to the plains area tend to have a very low road density. Road access to these areas is very difficult which makes the rural population live in isolated areas. Despite the available factors for agricultural development, these areas are economically backward, and the level of services is almost non-existent.

By contrast, the middle part of the plains area which is generally characterized by flat topography and dense population, make it possible to achieve a high road density pattern. Settlements here are connected by roads and populations have gathered in pockets of agriculturally rich areas where services have developed. Moreover, the

area is also characterized by a high degree of economic development, commercialization, and urbanization which indeed reflect the high road density.

So, it may be concluded that the low level of development in remote rural areas is reflected in the very low road density. This situation illustrates the impact of a hostile environment. So, the purpose of road development in Jizan should be aimed at breaking the isolation of the hilly and mountain areas, as well as bridging the distance handicap to the main dynamic development areas in the province.

Population

As the population increases in an area, the demand for transportation is intensified, as new transport lines are built into the area, a great population increase is encouraged, which in turn calls for still more transportation (Taff et al., 1973, p48). In Jizan province, the distribution of roads is associated with population concentration in more developing areas. The comparison between the road density (see fig.7.5) and population density (see fig.4.17, chapter 4), reveals a clear correlation ($R = 0.60$) between the two.

A close comparison of the road and population density figures illustrates this correlation. Obviously, there is a closer correlation in the middle part of the plains area than in the rest of the province. In areas 1 and 2 where population density is high, the road density is also high. Apart from the middle part of the plains, in the areas

which are considered as peripheral to urban areas, and with less population density, the road density appears to be very low.

Indeed, the road development in Jizan province has not widely benefited the remote rural areas. The distribution of roads is concentrated where there are high population densities around urban areas, and does not therefore help to solve the difficulty of accessibility in the remote rural areas.

Urban Effect

The spatial variation of road density in the province can also be affected by the distribution of urban centres. The concentration of major urban centres in the middle part of the plains area (particularly around the centres of Jizan, Sabya, Abu Arish, Sametah, and Baish) tends to produce high road densities, which in fact reflects the function of these centres as central places to the surrounding rural areas. This area therefore not only has the lion's share of major roads connecting the province with the rest of the country, but also possesses most of the secondary roads that connect the sub-emirate centres with major towns.

Moreover, the urban towns here are provided with municipalities and village cluster centres, which have been constructed on short feeder roads branching out from major or secondary roads. Indeed, these roads play a major role in village development, so that in actual fact the villages served by roads have acquired an importance not shared by villages that are not so served.

It is clear that the availability of roads in more urbanized areas has saved part of the agricultural activity, particularly vegetable production around towns and large villages. Therefore, in these areas, besides benefiting from the social and infrastructural services that are available in the nearby towns, people have also benefited from agricultural loans and have used pumped wells to revive agriculture. In addition, the rural settlements have been connected with local market-places so that the inhabitants of villages here have easy access to seeds, fertilizers, and other inputs to intensive agriculture.

Furthermore, cash crops are marketed quickly and consumer goods are readily purchased at the nearby market-places. In this area the road system has also encouraged a transition from traditional agriculture to cash-crop farming and has further benefited the rural population around the towns in that they now have easy access to health, education and other facilities that are available in the urban centres. Moreover, the road network has been of further advantage in lending the villages where weekly markets are set up a special importance. This is particularly true of those places where there is a daily market, which attracts large numbers of people from long distances to do business, far more than before the roads were laid. These dynamic activities have in turn attracted other services, such as schools, public services, and administration.

It is also worth noting that the middle part of the plains area, where the urban centres are located, has been provided with roads that create population mobility and good access to the urban centres. This

ease of access has resulted in a higher level of population settlement in these rural villages than in any other part of the province. People here are employed in neighbouring towns but live in their villages. In consequence of this, there are now more solid buildings in villages, where stone houses are rapidly replacing huts.

From the above discussion, it is clear that the provision of a road network has a remarkable effect in producing the contrast between the dynamic lifestyle of the middle part of the plains with the ready access to markets and social services and, on the other hand, the immobility and poverty of the relatively isolated communities of the coastal and mountain areas. So, the question is, what can be done to improve conditions for these people and to integrate them within the more developed parts of the province. The rural development in these areas require a definite focus on those places that act as rural service centres and provide good potential for intensive cultivation efforts. The linking of rural settlements with these service centres would offer new opportunities for improvement to the remoter communities. However, it is important that the development of rural areas should not be seen as the only element of transport development. The condition requires comprehensive development programmes concentrated on small towns easily accessible to rural populations via paved roads.

Chapter 8

Problems of Housing and Community Services

8.1 Introduction

The previous chapter has been concerned with rural problems in relation to the provision of education, health, and road network services. In this chapter an attempt is made to conclude the analysis of rural problems. It deals with the following matters: housing problems (including the structure of housing in the rural areas), electricity and drinking water supply, and waste and sewerage services. The second part of this chapter discusses community services such as fire services, telephones, and social security services.

8.2 Housing and Public Utilities

There is a close link between improving the economic situation and improving personal standards of living. It would be useless to improve economic conditions and workers' capacity while at the same time leaving living conditions at a low standard. The following analysis reviews the problems of rural housing in the province.

8.2.1 The Structure of Rural Housing

The structure of housing in the rural areas reflects the remoteness of these areas from the developed regions. Their

relatively isolated positions are reflected in the lack of development that has afflicted most areas of the country, not in rural areas in particular but throughout Jizan province in general.

Indeed, the new improvements in housing conditions in the province have not benefited the remote rural areas. Most of the development services, master plans, and research programmes have remained focused on urban problems while the rural areas have suffered neglect or received only marginal development. Rural houses in general are old and in poor condition. They are also inhabited by farmers who generally have low incomes and a low standard of living. Huts, the most common type, are constructed out of tree branches overlaid with mud. By their nature, they present a fire risk and they invite animal parasites which render them unhealthy for habitation. The major portion of the rural population have begun to replace these huts by block and cement constructions. The new houses, called shabi, are built of concrete blocks, with timbered roofs and rafters. Most have been built on land where huts once stood and it is common to see both huts and shabi side-by-side on the same lot (see fig.8.1).

Clearly, in comparison with urban housing, rural housing appears old and badly maintained. According to Serate's survey made in 1979 of eight emirates in the plains areas (see table 8.1), only 32.4 per cent of rural houses were less than five years old, compared with urban areas where 41.7 per cent of the total houses were less than 5 years old. A further 58 per cent of the urban houses were older than 5 years, while in rural areas this percentage increased to



Fig.8.1 Types of Rural Housing (a) refers to the characteristic rural housing in the hilly areas, while (b) refers to the rural housing in the coastal areas.



67.6 percent. This in fact reflects the rapid growth of cities in recent times where the housing stock is very recent, while the rural housing still reflects the traditional economy from which it originated.

Table 8.1 Distribution of Houses according to their Age in Eight Emirates of the Plains Area, 1979

Area	Less than 5 Years Old	5-19 Years Old	More than 20 Years Old
Urban	41.7	48.4	9.9
Rural	32.4	59.2	8.4

Source: Compiled from Serete Survey, 1979

The major characteristic of rural housing is that ownership of buildings is mainly private. Rented dwellings seem to be very few and correspond to the dwellings of teachers or Yemeni migrant workers. Table 8.2 indicates that 90.2 per cent of rural houses are shabi (some being a mixture of the shabi and hut type) and a small proportion of rural respondents (9.8 percent) live in apartments. The table also shows that 4.9 per cent of respondents have houses with only one room, 33.3 per cent have houses with two rooms, a further 47.2 per cent have houses with three rooms, and only 14.6 per cent have homes with more than 4 rooms.

Table 8.2 Rural Housing according to Number of Rooms, 1989

Type of Housing	Number of Rooms				Total	%
	1	2	3	>4		
<u>shabi</u> Houses	6	38	53	14	111	90.2
Apartment Houses	-	3	5	4	12	9.8
Total	6	41	58	18	123	100
%	4.9	33.3	47.2	14.6	100	

Source: Fieldwork, 1989

In urban areas, there has been a dramatic improvement in the quality of housing following the transition in the economy and increasing incomes. However, the rural areas, including the coastal, hilly, and mountain areas, still exhibit the old type of housing with poor facilities. According to the Sogreah Survey (1984), as illustrated in table 8.3, the percentage of villages with a majority of new houses was very low, i.e. only 29 per cent of the total villages in the province. Therefore, a high proportion of villages (71 per cent of the total villages in the province) were characterized by old types of housing. This reflects the fact that rural areas are still relatively underdeveloped compared to urban areas. In addition, rural areas have received a smaller proportion of housing loans from the Housing Development Fund. In 1988, the branch of the Housing Development Fund in Jizan town provided 6,500 loans, amounting to 2.4 per cent of the total loans in the whole of the country. This compares with Asir province in 1984, which had 5.2 per cent of the total loans in the whole of the country. Moreover,

only 16 per cent of housing loans were received by the rural population, i.e. only 7 per cent of the province's rural population obtaining loans in the whole country. This may be compared with Asir province in 1984, where the number of its rural population who benefitted from housing loans amounted to 15 per cent of the total rural population obtaining loans throughout the whole country.

Table 8.3 Classification of Villages according to the Quality of Houses, 1984

Type of Villages	No of Villages	%
Villages without old houses	13	1.4
Villages with less than 50% old housing	258	27.6
Villages with more than 50% old housing	410	43.9
Villages where all houses were old	253	27.1
Total of villages	934	100

Compiled from Sogreah Socio-Economic Survey of Villages and Hajar in the Kingdom, Fourth Report, 1984

In Jizan province, a distinction between the relatively developed houses in the plains area and the poorer condition of houses in the remote rural areas is still evident, testifying to the differences between what occurs in urban areas and what one sees in rural areas. Table 8.4 shows that the plains area, with 55 per cent of the total villages, had received 91 per cent of the total housing loans in the province, particularly around urban centres. This urban area of the middle plains stretches northward from Sametah town toward Baish town and here one finds well-developed houses with good facilities. Thus, for example, the emirates of Jizan Sabya, Baish, Abu Arish, and Sametah obtain about 60 per cent of the loans, because

most of the people here have access to building permits obtainable through municipalities and village cluster centres.

Table 8.4 Distribution of Housing Loans in the Province, 1988

Area	Total of Villages	%	No. of Loans	%
Plains Area	508	55	5,909	91
Hilly Area	318	34	489	7.5
Mountain Area	101	11	102	1.5
Total	927	100	6,500	100

Compiled from: 1 - Housing Development Fund, Jizan Province, 1988
2 - Sogreah Villages Survey, 1983

Moreover, these areas are connected by paved roads and provided with social and infrastructural services which make them more dynamic, enjoying easy access not only to urban towns but also to major towns outside the province. On the other hand, the areas which are away from this developing area, situated in the periphery of the province, are places where traditional agriculture is more dominant and rural housing is poorer in quality, older, and inhabited by people on lower incomes. In addition, the rural population here do not have access to housing loans. This appears in table 8.4 which indicates that the hilly and mountain areas, with 45 per cent of the total villages in the province, have received only 9 per cent of the total housing loans. This picture of wide disparity between urban and rural areas, particularly the coastal and mountain areas, is repeated not only in the poor quality of rural housing but also in

distribution of basic utilities such as electricity and water supplies, as well as sewerage and refuse collection.

8.2.2 Electricity Supply

One of the rural public utility problems in Jizan province is the lack of an electricity service. Indeed, in the rural areas, the supply of electricity is important not only for improving the economic situation, but also for improving the general standard of living. Unfortunately, in most developing countries, the availability of electricity and other services in urban centres has helped to create a major problem of rural migration to benefit from those services. This has been true of Jizan province as a rural backward area.

. Before 1978, the electricity situation was dismal. However, since 1980, emphasis has been put on major urban electrification schemes in Jizan, Sabya, and Abu Arish towns. The development of this service has been slow during the past years. In 1984, there were only 63 villages, or 6.7 per cent of the total villages, connected with electric power. At the present time, there is a great effort being made through a central power station located within the urban triangle of Jizan, Abu Arish, and Sabya towns. This scheme supplies electricity via temporary stations to the main towns and only 238 villages, i.e. 26 per cent of the total villages in the province (see fig.8.2).

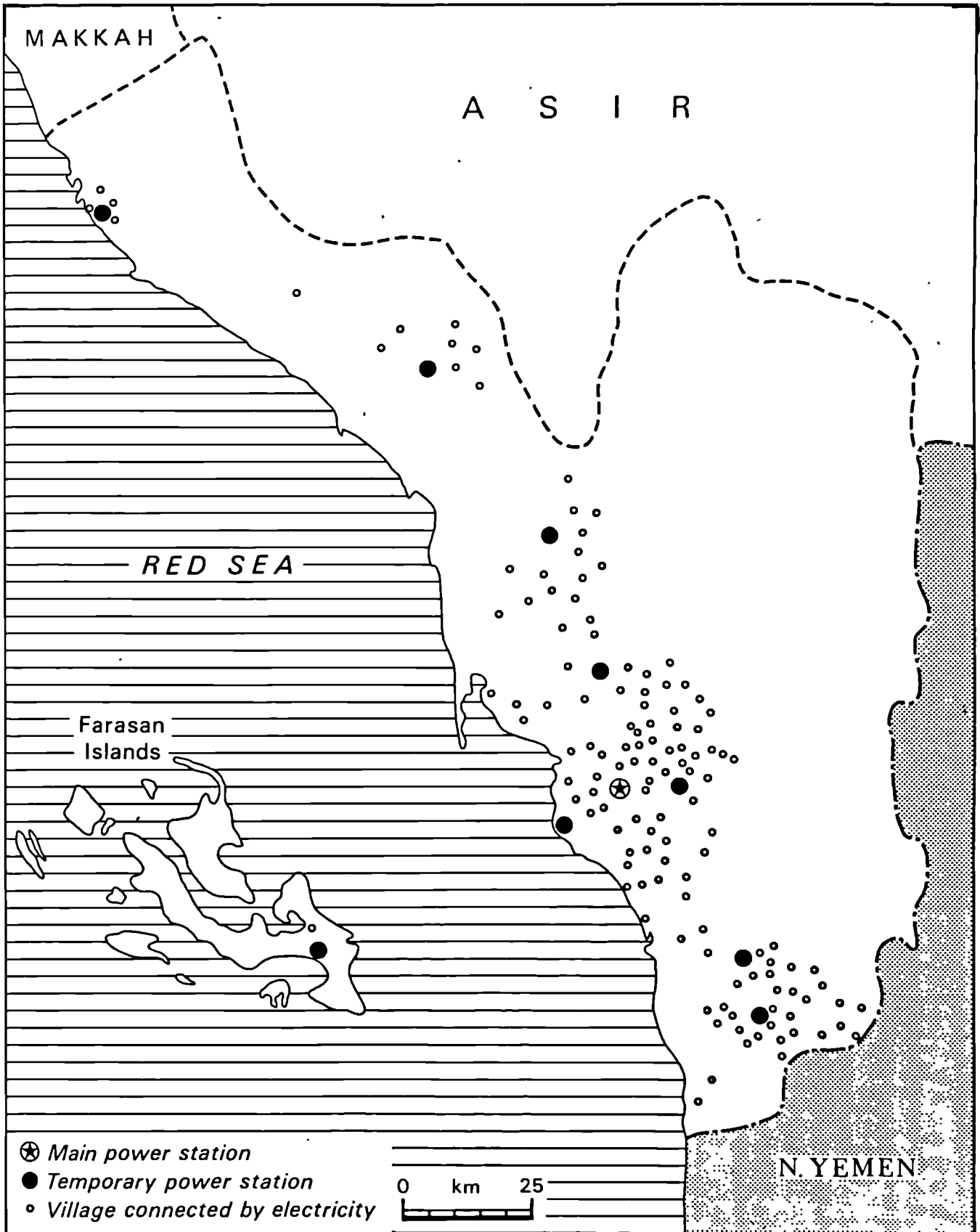


Fig.8.2 Distribution of Villages connected to Electricity

In fact, the electricity service is still concentrated in the plains area, particularly around urban centres. The village study (see table 8.5) shows that only 3 of the sample villages are supplied with electric power. These villages are located in the middle part of the plains area where the urban and high density of population are located, to the neglect of the rest of the province. The sample village of Al Hatan is close to Baish town, Al Asamilah is also located between Jizan and Abu Arish towns, and Al Harjah is located between Sabya and Abu Arish. According to data collected from the electricity headquarters office, 28 per cent of the total villages served with electricity are located in the emirates of Baish and Sabya, 33 per cent of the served villages are located in the emirates of Jizan and Abu Arish, and 22 per cent are distributed in the emirates of Al Ahad, Sametah, and Al Tuwal. This means that 83 per cent of the total villages supplied with electricity are located around urban centres where the paved roads and other infrastructural services are also available. Moreover, proposals for the future mean that there will be another 137 villages supplied with electricity, but all of them distributed in the plains area.

On the other hand, the villages away from the urban areas are unfortunately not served with electric power. Thus, in the plains area, the villages in the coastal areas, such as Al-Baisri, Al Arjain, and Al Hajanbah, are not connected to this service. Similarly, the hilly and mountain areas are still far from the electricity supply and there seems to be no project in the pipeline for bringing them into the system. Therefore, the installation of individual generators constitutes the response to the electricity

shortage and it is quite common in most villages to see up to ten neighbouring families sharing one small generator just for lighting. According to the villages survey (table 8.5), 81 respondents, or 65.8 per cent, were not connected to the general electricity power system. Seventy-six, (or 94 per cent), of these used special generators.

Table 8.5 Electricity Supply in Sample Villages, 1989

Area	No. of Served Villages	No. of Respondents	No. of Unserved Villages	No. of Respondents
Plains	3	42	3	25
Hilly	-	-	3	42
Mountain	-	-	2	14
Total	3	42	8	81
%	27.3	34	72.7	66

Source: Fieldwork, 1989

The above discussion shows that the electricity service, like other services, is inadequate in rural areas, and the majority of the rural population still use traditional systems for cooking. This deprivation has led to rural-urban migration, particularly during the fasting month, in order to benefit from urban services.

8.2.3 Rural Drinking Water Supply

The availability of clean drinking water is recognized as an important public health service in the provinces. Unfortunately,

however, three major shortcomings in this connection have been identified:-

- 1 - In the area close to the Red Sea, especially those places located in the Sabakh area, water from wells here turns out to be brackish. In this case, the population are supplied with their drinking water by a daily home delivery service from inland areas using tankers.
- 2 - Drinking water does not always meet the required health standards. Total salts and chemical composition are the critical factors.
- 3 - In the hilly and mountain areas, most of the population are dependent on small streams and open wells for drinking water, but these sources can often be contaminated by bacteria because the water is not treated.

A branch of the Ministry of Agriculture and Water has provided many clean-water schemes, which generally consist of a tube well equipped with a motor pump, a chlorination room, an elevated tank, and a distribution pipe network to surrounding villages. In 1984, 91 villages or 9.87 per cent of the total villages of the province, were served by drinking water networks. This number has since increased to 253 or 27 per cent of the total villages, in 1988. However, despite these improvements in the majority of villages (73 per cent), water is supplied through private water tankers, by water porters. It is drawn from a nearby well or stream. Table 8.6 and fig.8.3 show

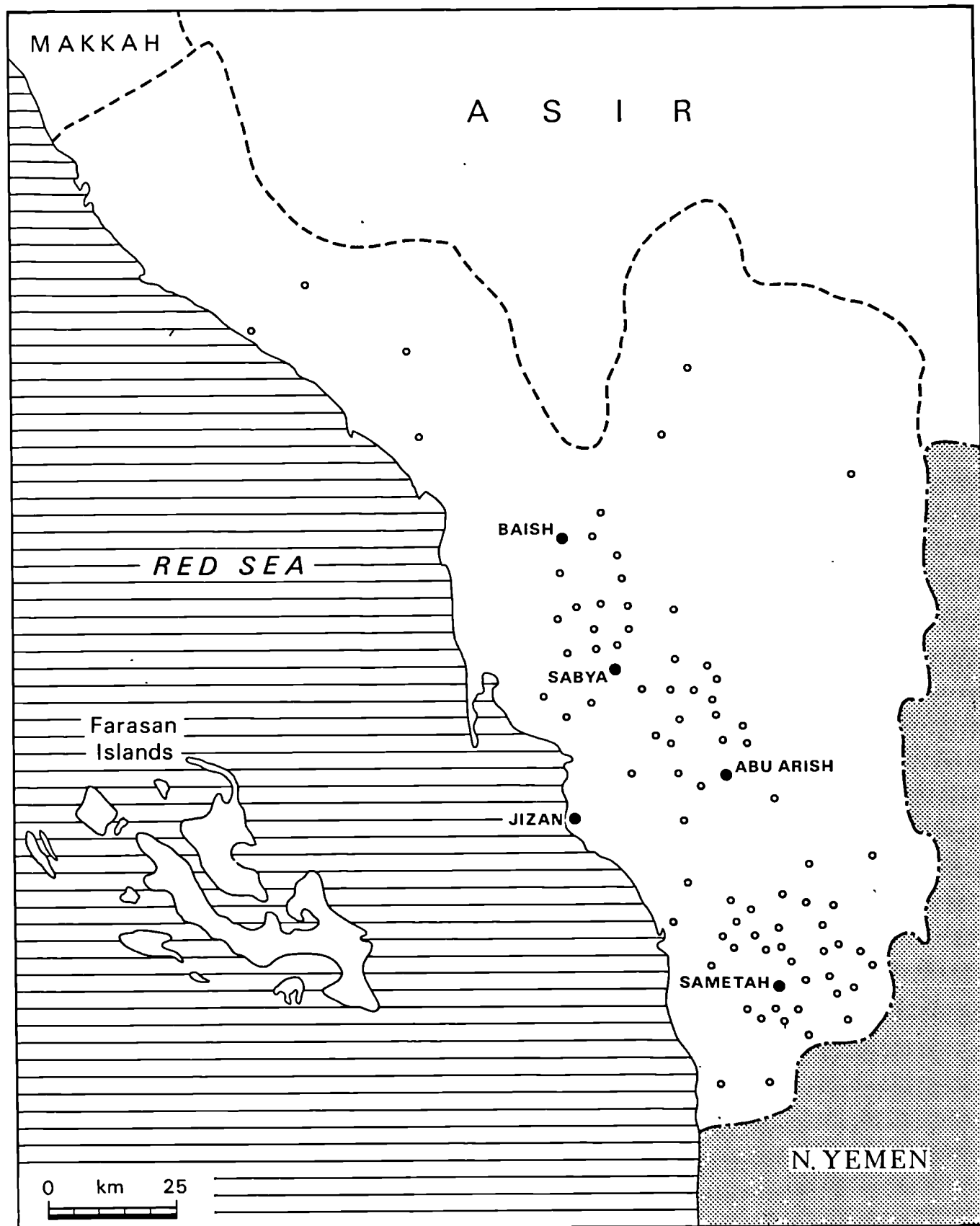


Fig.8.3 Distribution of Drinking Water Schemes in the Province in 1988

that there were 81 rural drinking water schemes in the province in 1988. It is clear that the distribution of water schemes does not cover all the province's areas. The table illustrates that the plains area, with 55 per cent of the total villages, is dominated by a high proportion (89 per cent) of the total schemes, while the hilly and mountain areas, with 45 per cent of the total villages, have a slighter proportion (11 per cent) of the total water schemes. The table also shows that 42 per cent of plains villages benefit from the drinking water network, while in the hilly and mountain areas only 14 per cent of the villages are served by drinking water schemes.

Table 8.6 Distribution of Rural Drinking Water Schemes in Jizan Province, 1988

Area	% of Villages	No. of Schemes	%	No of villages served by Schemes	%
Plains	55	72	88.9	212	42
Hilly	34	7	8.6	39	12
Mountain	11	2	2.5	2	2
Total	100	81	100	253	27.2

Compiled from:- 1 - The Report of the Water Schemes Branch of the Ministry of Agriculture and Water in Jizan Province, 1988
2 - Sogreah Villages Survey, 1983

The results of the field study represented in table 8.7 show that only 41.4 per cent of respondents obtain their drinking water from a piped supply and these people belong to the villages of Al Asamilah, Al Harjah, Al Hatan, and Al Arjain. The first three of these villages are located in the middle part of the plains areas

where most effects of the development process are distributed. Forty-four per cent of respondents have their drinking water supplied by trucks (see fig.8.4). These people live in the coastal villages such as Al Baisri and Al Hajanbah, and the hilly villages such as Gawa, Al Juwah and Sirrain. A further 5.7 per cent of respondents obtain drinking water from wells and all these people live in the hilly and mountain areas. Finally, 8.9 per cent of respondents obtain their drinking water through rain tanks, i.e. they collect the water during the rainy season and store it in tanks for drinking. These people belong to the villages of the high mountain area where there are no roads passable by water-tankers.

Table 8.7 Drinking Water Systems in Sample Villages, 1989

Area	Resp. drink from pipe supply	Resp. drink from truck supply	Resp. drink from wells	Resp. drink from rain tanks	Total
Plains	51	16	-	-	67
Hilly	-	36	4	2	42
Mountains	-	2	3	9	14
Total	51	54	7	11	123
%	41.4	44	5.7	8.9	100

Source: Fieldwork, 1989

Those who must obtain water from outside their villages bring their drinking water sometimes from distances as far away as 15 km and this with difficulty over rough roads. The villages study (see table 8.8) revealed that 50.4 per cent of the respondents travel less



Fig.8.4 **Water Supply by Trucks**

than 1 km to the water source. These people are supplied with piped drinking water through stand-pipes in the main villages, so that the rural houses are not directly supplied with piped water but must carry it over some distance.

Table 8.8 Distances to Drinking Water Sources in Sample Villages, 1989

Distances in km	No of Respondents	Percentage	Cummulative %
less than 1 km	62	50.4	50.4
1 - 3	17	13.8	64.2
4 - 6	24	19.5	83.7
7 - 9	13	10.6	94.3
> 10	7	5.7	100
Total	123	100	-

Source: Fieldwork, 1989

Only 13.8 per cent of the total respondents travel between 1 and 3 km to obtain their water, 19.5 per cent obtain their water from sources between 4 and 6 km away, a further 10.6 per cent travel between 7 and 9 km, and 5.7 per cent obtain their drinking water by travelling more than 10 km.

The problems of drinking water supply in the rural areas make themselves evident during field work, for most of the rural population complain about the difficulties of water supply. The rural population in remote villages pay a high price for small tanks

and this price grows even higher during the rainy and irrigation season when the roads deteriorate, particularly for those people in coastal and mountain areas.

8.2.4 Waste Collection

Generally, there is no waste collection system in the rural settlements. Therefore, in most cases waste is thrown over the enclosure walls or into adjacent empty plots where it remains decomposing until it is scattered by winds or animals.

The urban centres and large towns in the middle part of the plains areas take regular collections daily and after weekly markets and these are provided by the administration of the municipalities of Sabya, Baish, Abu Arish, and Sametah towns, and cluster village centres that are located in Al Tuwal, Al Ahad, and Wadi Jizan. Table 8.9 shows that only 167 plains villages, or 18 per cent of the total villages of the province, are served by municipality and cluster village centres, while the high proportion of rural settlements (82 percent) are suffering from the problems of waste collection, particularly after the rapid changes in socio-economic conditions.

In fact, these villages are distributed around urban centres of the middle part of the plains area stretching north from Al Tuwal emirate towards Sabya and Baish emirates, where the high density of population and development benefits are evident. Nevertheless, these villages are near to urban centres, the collection of waste is not regular, but may take place every two weeks or perhaps monthly when

the villages put in a claim to the municipality or the village cluster centres for a waste collection, following which a dumper truck comes from town to collect the waste from the nearby villages.

Table 8.9 Villages Served by Municipalities and Cluster Village Centres in the Province, 1989

Named Municipal and Village Cluster Schemes	No of Villages	%
Sabya Municipality	33	19.8
Baish Municipality	24	14.4
Ab Arish Municipality	18	10.8
Sametah Municipality	15	9.6
Al Tuwal Village Cluster centre	19	11.4
Al Ahad Village Cluster centre	30	18.0
Wadi Jizan Village Cluster centre	28	16.7
Total	167	100

Source: Fieldwork, 1989

Away from these urban areas, in the peripheral rural areas where the majority of the population have no access to municipality and village cluster centre services, the situation is worst, for waste is thrown onto the roads. During the fieldwork, the writer observed that the collection of waste in the province is dismal in general, but particularly in the remote rural areas. The sample village study (see table 8.10) revealed that only 2 villages, with 23 per cent of respondents, mentioned that collections of waste in their village usually take place between twenty days and one month, after

several claims. These villages, like Al Asamilah and Al Hatan, are close to the larger urban centres of Abu Arish and Baish. However, the coastal, hilly, and mountain villages are very far from these irregular services, so that 82 per cent of sample villages with 77 per cent of respondents are not served at all.

Table 8.10 Waste Collection in the Sample Villages in Jizan Province, 1989

Area	No of Served Villages	No of Respondents	No of Unserved Villages	No of Respondents
Plains	2	28	4	39
Hilly	-	-	3	42
Mountain	-	-	2	14
Total	2	28	9	95
%	18	23	82	77

Source: Fieldwork, 1989

The above discussion highlights two important factors: first, the weakness of the environmental health services in the province in general and in rural areas in particular; and second, the imbalance between the urban centres of the plains area and the rest of the province in the provision of services.

8.2.5 Sewerage

In Jizan province, no sewerage system exists anywhere either in rural or urban areas. The most common system used in most towns and

large villages is cesspools or pit latrines, particularly in the houses built by the Housing Development Fund. Poor houses in remote rural areas actually have no sanitary installations at all. People in small villages and hamlets dispose of their sewage outside their houses.

It is obvious that in urban areas, people have better incomes with relatively easy access to housing loans, education, health, and many other services. These facilities have created demands for better living conditions. For these reasons house design and basic services are being rapidly developed. On the other hand, in the peripheral rural areas where the traditional agricultural economy is more dominant, rural housing is generally poorer in quality, older in age, and lacking in basic utilities. This picture of wide differences between developed houses around urban centres and the poor conditions of remote rural housing is everywhere apparent.

8.3 Community Services

This section deals with what are called community services, the most important of which, examined here, are the fire service, civil affairs, post offices, telecommunications and social security services.

8.3.1 Fire Service

There are six fire stations in Jizan province with an average of one station per 154 villages. Five of these stations are

concentrated in the major urban centres of Jizan, Sabya, Abu Arish, Sametah, and Baish. Only one station is located outside the urban areas, in Al Aridah town.

One of the main problems facing the rural population is the inadequacy of this service, since there are no public telephones in rural areas and the roads are generally in a poor condition, particularly outside the urban areas. In this case the rural population must drive to the nearest fire station in order to fetch the firemen, a trip which is much too long for efficient fire-fighting in the settlements, where most of the fires involve the traditionally built houses or markets where there are highly flammable materials. Thus in 1984, fire damaged half of the weekly market in Al Khawbah centre.

It is obvious that the distribution of fire stations in the province does not benefit the rural areas, for the majority of the rural population are not within easy access of this service. The worst deprived parts of the province are to the south-west, around Al Mussam, south-east around Al Khawbah town, the northern part around Ad Darb town, and the mountain areas around Ad Dyer and Al Haque. The analysis of the fieldwork survey (table 8.11 and fig.8.5) show that among the study villages only Al Hatan and Al Asamilah are near to fire stations with services located 8 km and 15 km away respectively. The villages furthest away from this service are in the mountain area, i.e. such villages as Khashir and Rohan which are about 80 km from the nearest fire station, located in Sabya town. Further, the villages of Al Hajanbah in the northern part of the

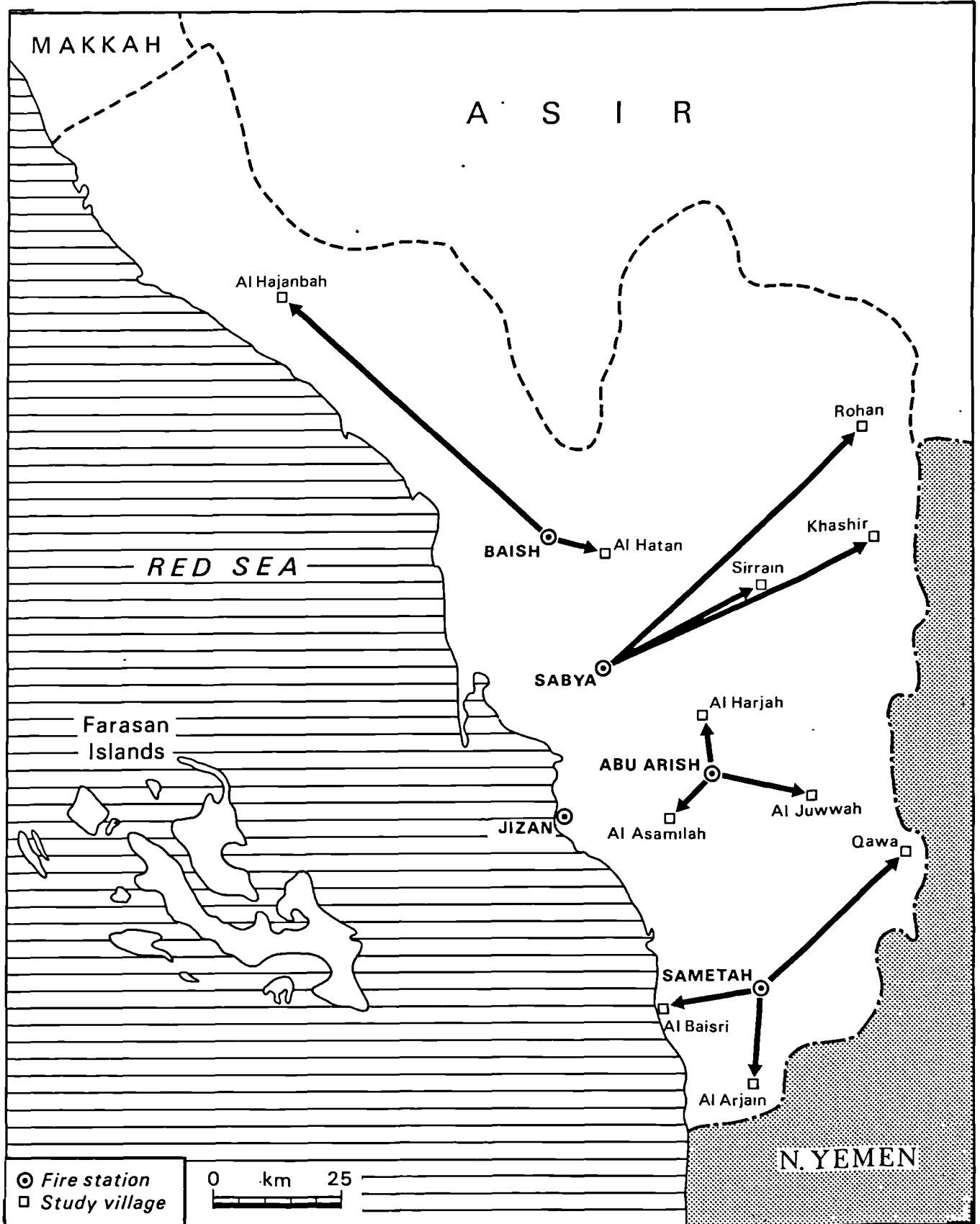


Fig.8.5 Distribution of Fire Stations in the Province in 1988

province, Gawa in the south-east, and Al Arjain in the south-west are at distances of more than 40 km from Baish and Sametah fire stations. Moreover, for people in Al Baisri in the coastal area and Sirrain in the hilly area, the nearest stations are Sametah and Sabya which are at distances of more than 20 km.

Table 8.11 Distances to the Nearest Fire Stations according to Respondents, 1989

Village	Nearest Fire Station	No of Respondents	%	Distances in km
Al Baisri	Sametah	8	6.5	25
Al Arjain	Sametah	9	7.3	43
Al Asamilah	Ab ^U Arish	15	12.2	15
Al Harjah	Ab ^U Arish	14	11.4	18
Al Hatan	Baish	13	10.6	9
Al Hajanbah	Baish	8	6.5	47
Gawa	Sametah	13	10.6	46
Al Juwwah	Al Ardah	18	14.6	17
Sirrain	Sabya	11	8.9	31
Khashir	Sabya	8	6.5	75
Rohan	Sabya	6	4.9	81
Total		123	100	-

Source: Fieldwork, 1989

It is clear that the main problem for the rural population is the difficulty of access to this service, since more than half of the respondents (51.2 per cent) are at distances of more than 20 km. Indeed, discussion during the fieldwork revealed that most of the rural population are deeply concerned about the improvement of this service through the setting up of new stations in the sub-emirates, and improving the communication services and roads in rural areas. It is clear that remote rural areas outside the urban areas are much too far away from the provision of fire-fighting facilities.

Therefore, further provision should be made in small towns in order to provide the needy majority of the rural population with easy access to this service.

8.3.2 Post Offices

The post office headquarters are located in Jizan town. This office collects mail from and delivers to sub-emirate centres and large villages via small sub post-offices. There are 16 main centres in large towns and 14 branches in the rest of the province (see fig.8.6). Therefore, we find that there is one centre per 31 villages whether large or small. Table 8.12 shows that the plains area, with 55 per cent of the total villages, dominates with 73 per cent of the total post offices in the province, or an average of one post office per 23 villages. Moreover, 72 per cent of the total post offices in the plains area are concentrated around the urban centres, stretching from the emirate of Sametah in the south, toward the emirate of Baish in the north. The hilly area, with 34 per cent of the total villages, has only 17 per cent of the total post offices with an average of one post office per 64 villages. In fact, all the post offices in this area are concentrated in the towns of Iban, Horub, Al Haque, Al Aridah, and Al Khawbah. Finally, the mountain area, with 11 per cent of villages, contains 10 per cent of the total post offices, or an average of one post office per 34 villages. The offices are concentrated in the important towns of Fayfa and Ad Dyer. Clearly, the plains area, particularly the middle part of the plain, has the best rate of post offices proportional to villages.

Table 8.12 Distribution of Post Offices in the Province, 1988

Area	No.of Villages	%	No.of Post Offices	%	Post Offices per Village
Plains	508	55	22	73	23
Hilly	318	34	5	17	64
Mountain	101	11	3	10	34
Total	927	100	30	100	122

Compiled from:- 1 - Head Post Office of Jizan Province, 1988
2 - Sogreah Village Survey, 1983

The field survey (table 8.13) shows that this service is inadequate in rural areas, since the rural population have to travel to the nearest post office to send and collect their mail. The most disadvantaged areas are those around the emirate of Dihamah where the rural population are compelled to travel to Sametah town about 25 km away, for post office services. Other deprived areas are the hilly and mountain areas around As Salb, Al Humirah, Al Hashr, Ar Rabuah, and Iban where the rural population have to travel more than 15 km to obtain services.

It should be noted that the post office branches outside the major urban towns only provide the services of sending and collecting letters. Rural population have to travel to the main urban centres to transact their postal business. Clearly the present state of the postal services in the province is inadequate, so that it is necessary to provide this service to rural areas by establishing main post offices in small towns in order to provide easier access for the

rural population.

Table 8.13 Distances Travelled to Reach Post Offices according to Respondents, 1989

Village	Nearest Post Office	No of Respondents	%	Distances in km
Al Baisri	Sametah	8	6.5	25
Al Arjain	Al Mussam	9	7.3	13
Al Asamilah	Ab ^u Arish	15	12.3	15
Al Harjah	Dhamad	14	11.4	13
Al Hatan	Baish	13	10.6	9
Al Hajanbah	Ash Shuqaiq	8	6.5	11
Gawa	Al Khawbah	13	10.6	3
Al Juwwah	Al Aridah	18	14.6	17
Sirrain	Iban	11	8.9	11
Khashir	Ad Dyer	8	6.5	12
Rohan	Ad Dyer	6	4.9	14
Total		123	100	-

Source: Fieldwork, 1989

8.3.3 Civil Affairs Offices

The tendency to concentrate services and facilities in major towns is also evident in the provision of civil affairs offices. These offices serve people with identity cards, birth and death registration, passports, and wedding and divorce registration. All the civil affairs offices are located in the major towns of Jizan, Sabya, Sametah, Abu Arish, and Fayfa, with an average of one office per 185 villages or one office per 103,333 persons. Looking at the distribution of this service in the province, it is clear that all the rural areas outside the urban centres are suffering from the difficulty of access to this service. The rural population have to

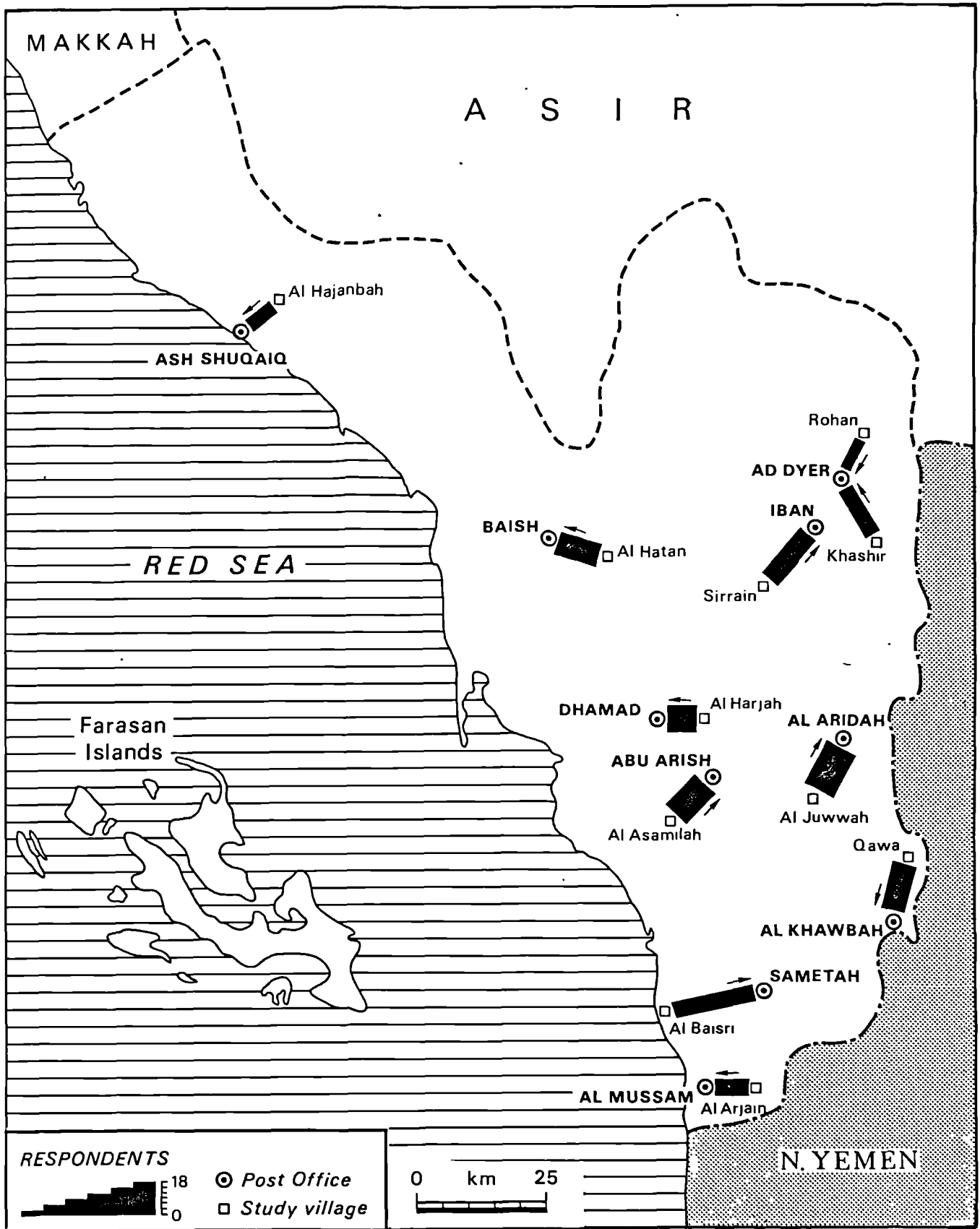


Fig.8.6 Travel by Respondents to Post Offices in 1988

travel long distances to obtain this service. The major problem here is with elderly people who are compelled to travel to obtain identity cards so that they might claim for social security benefits.

Moreover, the poor state of roads and public transport between rural settlements and the urban centres makes the situation even worse, since the majority of the rural population do not have private cars.

The field survey (see table 8.14 and fig.8.7) illustrated that the most seriously deprived areas in the province are the northern emirates such as Al Qahmah, Ash Shuqaiq, Ad Darb, Itwad, Al Haque, and Masliyah. The nearest civil affairs office is in Sabya, which is more than 120 km from the northern emirates. Other deprived areas are those of the south-eastern emirates, such as Al Khawbah and As Salb. The nearest office to these emirates is in Sametah, which is about 46 km away. Furthermore, in the emirates of the south-western part, such as Al Mussam and Dihamah, the population have to travel to Sametah office more than 25 km away.

The nearest villages to civil affairs services are those located in developed areas around urban centres, such as Al Asamilah which is at a distance of about 15 km from Abu Arish town, and Al Harjah which is about 18 km from the same town. Further the village of Rohan is also considered as being near to Fayfa town, but still at a distance of 21 km.

In real terms, a high proportion of rural settlements are sited far from this service, which means that their inhabitants are compelled to travel long distances. Considering the condition of

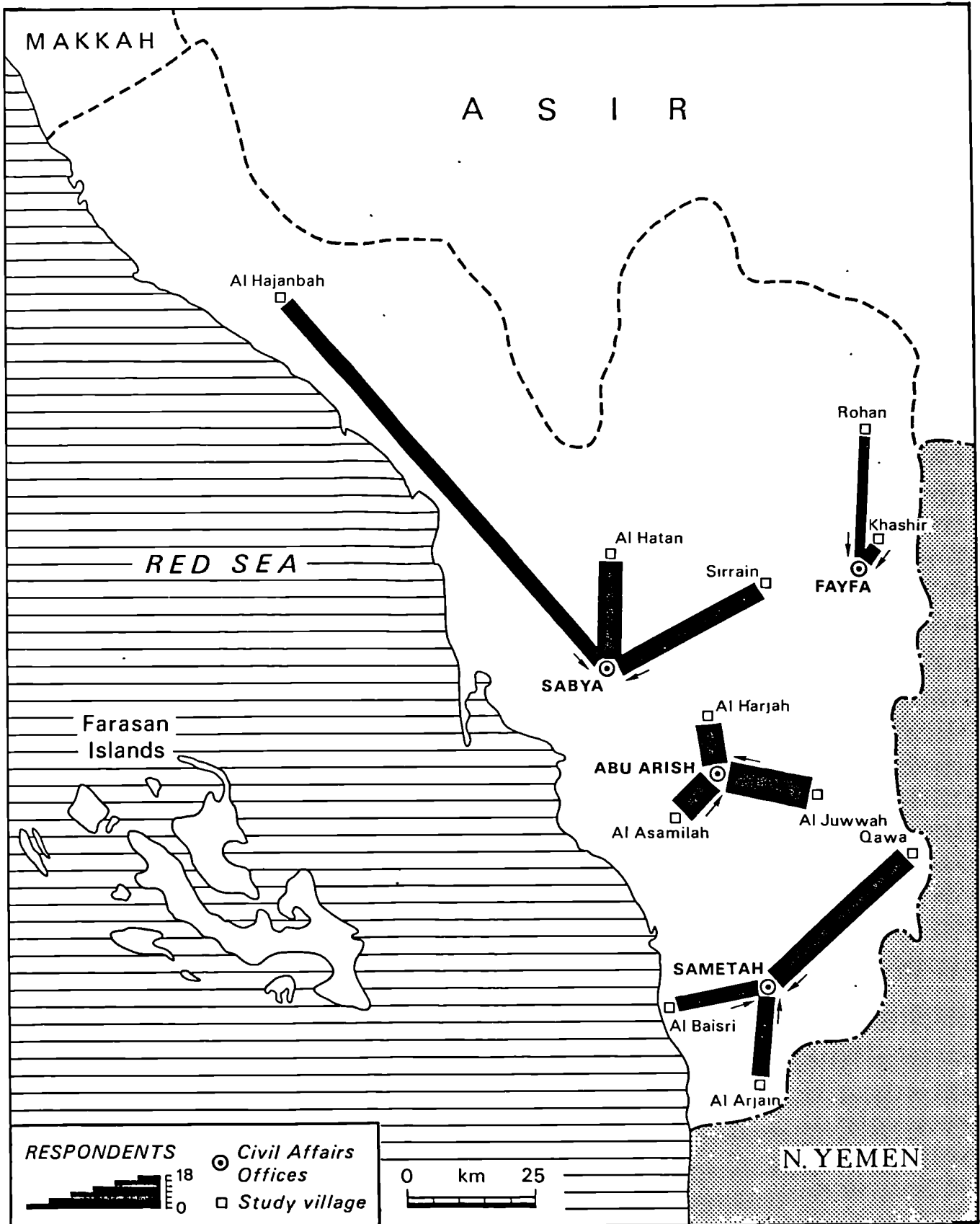


Fig.8.7 Travel by Respondents to Civil Affairs Offices in 1988

rural roads, the long distances, the costs of transport, and the circumstances of the elderly among the rural population, we can say that there is a problem of access to civil affairs services.

Therefore, the condition requires the setting up of new offices in small towns to be easily accessible by dwellers in the greatly neglected rural areas.

Table 8.14 Distance to the Nearest Civil Affairs Offices, 1989

Village	Nearest Civil Affairs Office	No of Respondents	%	Distances in km
Al Baisri	Sametah	8	6.5	25
Al Arjain	Sametah	9	7.3	43
Al Asamilah	Ab ^u Arish	15	12.3	15
Al Harjah	Ab ^u Arish	14	11.4	18
Al Hatan	Sabya	13	10.6	37
Al Hajanbah	Sabya	8	6.5	120
Gawa	Sametah	13	10.6	46
Al Juwwah	Ab Arish	18	14.6	42
Sirrain	Sabya	11	8.9	31
Khashir	Fayfa	8	6.5	21
Rohan	Fayfa	6	4.9	27
Total		123	100	-

Source: Fieldwork, 1989

8.3.4 Telephone Services

There is no telephone service in the villages no matter how big they might be. This is exclusively an urban service, so that to make their calls the rural population must travel where telephones are available in the major towns such as Jizan, Sabya, Abu Arish, Sametah, Baish, Dhamad, Al Ahad, Ad Darb, and Fayfa. All these

offices are located in the middle part of the plains area around urban centres, except for the Fayfa office which is located in the high mountain area.

Therefore, considering this distribution in terms of its accessibility by the rural population, it is clear that the rural areas outside the centres are far away from this service. The most deprived areas are the south and south-west of the province, as is the case of the emirates of Dihamah, Al Mussam, and Al Tuwal. Other deprived areas are the hilly and mountain areas around the emirates of Al Khawbah, As Salb, Al Aridah, Al Humarah, Al Haque, Horub, Iban, and Ad Dyer. Moreover, the northern emirates such as Al Qamah, Ash Shuqaiq, and Itwad are also beyond the reach of this service.

The field survey (see table 8.15 and fig.8.8) showed that among the study of villages, only Al Hatan, Al Asamilah, and Al Harjah are near to the telephone service, i.e. at distances of less than 15 km. Indeed, these villages are distributed around urban centres where most facilities are available. On the other hand, the remaining villages outside this more developed area are far away from this facility. The villages furthest from telephone services are those in the south-eastern part, i.e. villages such as Gawa. People in this part have to travel to Sametah town, about 46 km away, to reach this service. People in the emirates of Al Mussam and Dihamah have to travel to the same town from distances of about 45 km away. Further, the rural population in the village of Al Juwah in the emirate of Al Aridah have to travel to Abu Arish town, about 42 km away, and the rural population in the northern part, like those in Al Hajanbah

village, have to travel to Ad Darb town about 19 km away to benefit from the telephone service. Finally, the rural population in the emirate of Ad Dyer have to go to Fayfa town, more than 20 km away. It is obvious that the remote rural areas are suffering from the difficulty of access to telephone services. This difficulty is reflected in the high proportion of the rural population (78 per cent of respondents) who have to travel more than 15 km to reach telephone services. In fact in some areas, access to telephone services may be even more difficult on account of the lack of transport services in rural areas, particularly in the case of the coastal and mountain areas.

Table 8.15 Distances to Telephone Services according to Respondents, 1989

Village	Nearest Telephone Service	No. of Respondents	%	Distances in km
Al Baisri	Sametah	8	6.5	25
Al Arjain	Sametah	9	7.3	43
Al Asamilah	AbuArish	15	12.3	15
Al Harjah	Dhamad	14	11.4	13
Al Hatan	Baish	13	10.6	9
Al Hajanbah	Ad Darb	8	6.5	19
Gawa	Sametah	13	10.6	46
Al Juwwah	Ab Arish	18	14.6	42
Sirrain	Sabya	11	8.9	31
Khashir	Fayfa	8	6.5	21
Rohan	Fayfa	6	4.9	27
Total		123	100	-

Source: Fieldwork, 1989

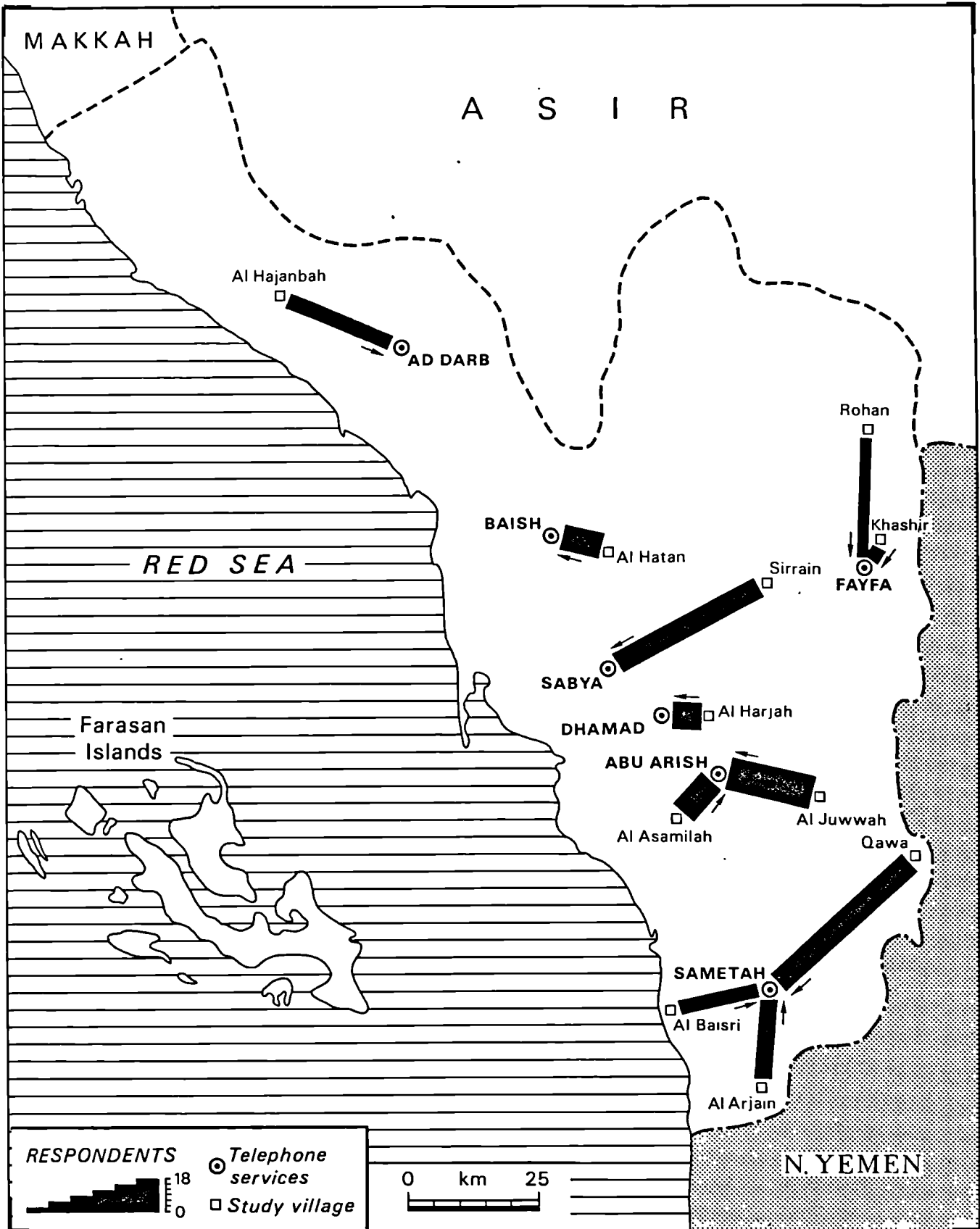


Fig.8.8 Travel by Respondents to Telephone Services in 1988

8.3.5 Social Security Offices

Social security services represent another area of inadequate provision in the rural areas of Jizan province. Like other community services, the distribution of social security offices is limited to the few towns of Jizan, Sabya, Iban, Ad Dyer, and the Farasan Islands. The average here is one office per 185 villages. This high ratio indeed makes the majority of elderly and handicapped people worse off in terms of access to social security services, for it is clear that the rural population have to travel long distances to reach these offices.

The most seriously disadvantaged areas are the north, north-east, south-west, and south-east parts. The field survey (see table 8.16 and fig.8.9) revealed that in the northern part, the deprived areas are the emirates of Al Qam^h, Ash Shuqaiq, Ad Darb, and Itwad. Here the rural population have to travel to Sabya town more than 120 km away in order to reach the social security office. In the south-west of the province, the deprived areas are the emirates of Al Mussam, Dihamah, and Al Tawal, where the population have to travel to Jizan town about 118 km away.

Other deprived areas are those belonging to the emirates of Al Khawbah, As Salb, and Al Aridah, where the population have to travel to Jizan town over distances of more than 80 km. During the fieldwork, elderly people complained bitterly about the long distances separating them from the social security offices, particularly those people living in remote rural areas without

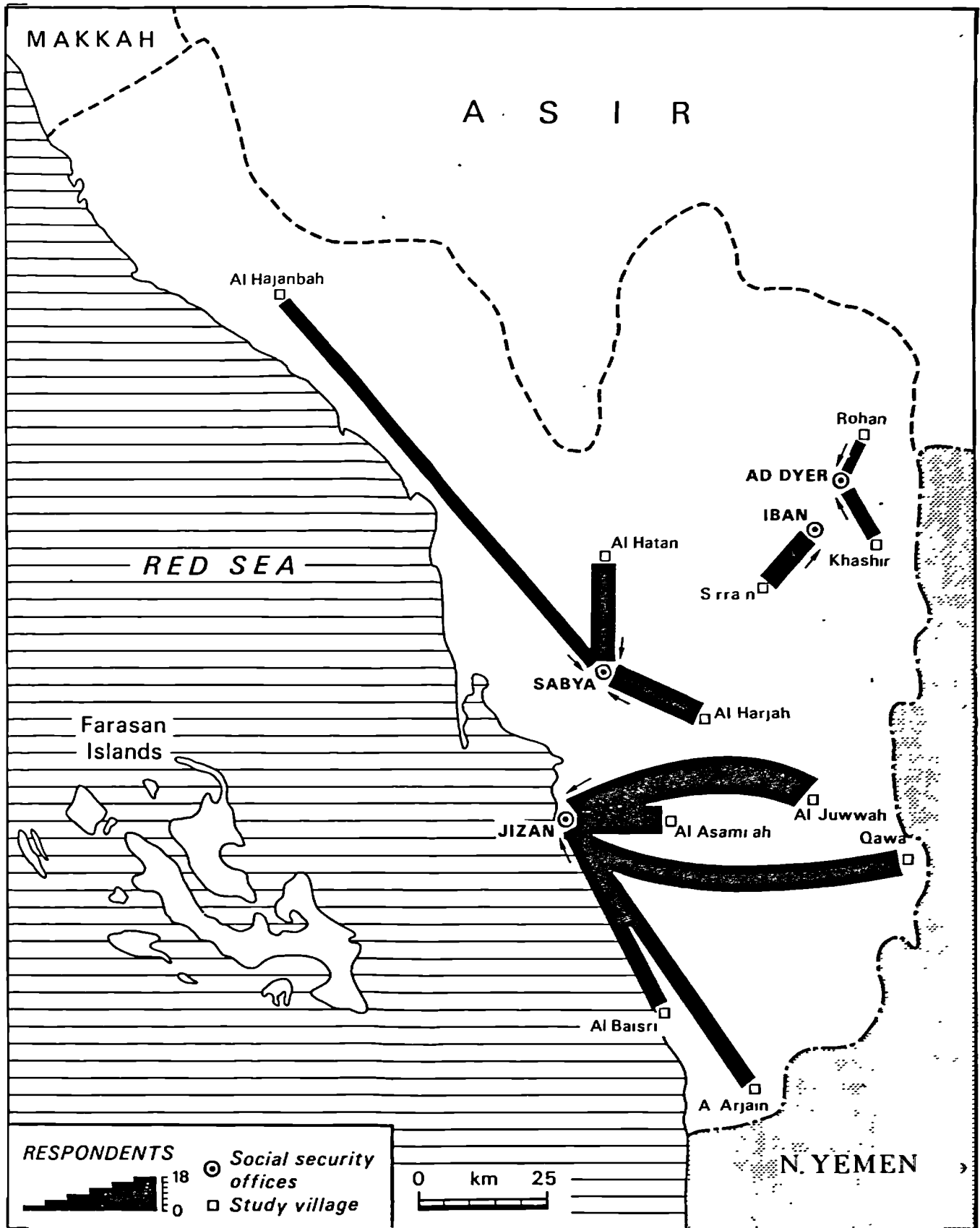


Fig.8.9 Travel by Respondents to Social Security Offices in 1988

transport or with only difficult access to transport.

Table 8.16 Distances Travelled to Social Security Offices, 1989

Village	Nearest Office	No. of Respondents	%	Distances in km
Al Baisri	Jizan	8	6.5	87
Al Arjain	Jizan	9	7.3	118
Al Asamilah	Jizan	15	12.3	23
Al Harjah	Sabya	14	11.4	25
Al Hatan	Sabya	13	10.6	37
Al Hajanbah	Sabya	8	6.5	120
Gawa	Jizan	13	10.6	89
Al Juwwah	Jizan	18	14.6	86
Sirrain	Iban	11	8.9	11
Khashir	Ad Dyer	8	6.5	12
Rohan	Ad Dyer	6	4.9	14
Total		123	100	-

Source: Fieldwork, 1989

8.4 Conclusions

One of the major problems facing the rural areas of Jizan province is their relative isolation from the mainstream of economic and social development centred on the urban areas. This isolation is in fact the result of a weak relationship between urban and rural centres whereby the areas around the urban centres obtain the greater provision of social and economic activities, whilst the rural areas beyond tend to remain primitive or backward areas in the context of service provision.

The findings of the field survey on service provision in the rural areas revealed that, in spite of the rapid expansion of

development services and facilities over recent years, the bulk of the rural population has not benefited greatly from them. The majority of sample villages in remote rural areas, particularly in the southern and northern parts of the plains area, as well as in the hilly and mountain areas, are not within easy reach of the available services. The majority of their problems constitute deprivation in the distribution of basic utilities such as electricity and water supply, poor connections to communication networks (roads and telephone services), and inadequate distribution of health and educational services (secondary and intermediate schools and hospitals).

Obviously, there is a wide disparity of access to services between those living in the urban areas and those in the remote rural areas. The population of urban areas do not have extensive access to social and physical services, but they do make great use of them. The great variation in these opportunities derives from three main rural problems: the weakness of the local economy where low incomes are obtained, a low standard of living with poor housing conditions, and poor opportunities of employment. Indeed, there is a general dissatisfaction with rural life, particularly among younger people who have left the disadvantaged rural areas for the dynamic urban centres where lifestyles and incomes are more attractive.

There is therefore an evident need for attempts to be made to narrow the gap between the situation prevailing in the rural areas of Jizan province where the majority of the population live, and that which obtains in terms of development achievement in the urban

centres. It is clear that the provision of adequate public and infrastructural services to rural settlements is the vital approach to rural development. To achieve this, much more attention to the role of small towns is required in order to create a significant improvement in access to services among the majority of the rural population. This policy would be beneficial not only in improving the standard of living in rural areas, but also in promoting the local agricultural economy and rural development planning.

Chapter 9

Urbanization in Jizan Province

9.1 Introduction

In the last three chapters, the rural problems of Jizan province have been discussed. In this chapter, the purpose is to analyze the urban system in this area, because the spatial structure of development theories emphasizes that rural and urban areas should be integrated and linked to each other.

However, in developing countries, particularly oil producing countries, the rush to development has created a high degree of polarization of development, not only between regions, but also between urban and rural areas. The tendency to concentrate most of the investments in a few centres while the remote rural areas are growing slowly or even declining, has created a push factor from declining to dynamic regions, from rural to urban, from small villages to larger towns. Consequently, the growth of urban centres is actually attributable to the stream of rural-urban migration at the expense of agricultural production and rural development. It is therefore important that any attempt to study rural development should be based on understanding of the urbanization phenomenon in any region or country.

Here, we shall first try to give a brief definition of the urban development in Saudi Arabia. Then the urban system in Jizan province will be analyzed with reference to the development pattern and

population of urban areas during the last years. Finally, urban and rural relations in the province will be taken up.

9.2 Definitions of Urbanization in Saudi Arabia

When geographers accept and produce special studies of urban areas, this implies in fact that there is a counterpart to such studies in the concern for rural areas. At first sight, the distinction between urban and rural concepts seems to be easy to draw, but close examination reveals that such a study is complex and intertwined. The definition of town and village varies from one country to another. Some people depend on the size criterion, some on the function, and others on the class, etc. Consequently, we find a lot of terms being used such as 'hamlet', 'village', 'town', and 'city', each of which has different connotations. (Hijazi, 1982)

Thus, a difficult and complex problem arises when we try to draw the borderline between rural and urban areas. As a matter of fact, the two ranges overlap because they complement each other. Inhabitants of the urban areas depend on the rural areas in obtaining agricultural produce and foodstuff. Conversely, rural communities rely on urban ones in obtaining commercial facilities and public or private services that belong to different administrative sectors. However, we can say that urban areas have certain characteristics that help maintain an overall distinction from rural areas. This makes the general content of each different from the other. The difference can be attributed to the greater development which the town has witnessed than the village.

In spite of the differences between urban and rural, the distinction is understood quite readily in everyday parlance. However, the distinction between them is still a controversial issue. The United Nations Demographic Yearbook for 1952 drew the conclusion that "there is no point in the continuum from large agglomerations to small clusters or scattered dwellings where urbanity disappears and rurality begins; the division between urban and rural population is necessarily arbitrary." (Quoted in Carter, 1981, p16)

In order to fully comprehend the general aspects of this issue, it is necessary to benefit from the efforts exerted by the United Nations report published in 1969 under the title Growth in the World's Urban and Rural Population, 1920-2000, which presents a list of definitions in the estimation of urban populations as nationally defined (Carter, 1981, p17). An extract of criteria used are represented in the table 9.1.

This table shows that most statistical organizations in the world depend on population as the basis for urbanization. Administrative functions and population density follow the population size.

In actual fact, aspects of rural and urban life are not constant; in other words, aspects of rural and urban communities vary both in time and place. What is considered a characteristic of the urban personality in one area may not be so in another, and the other way around; what characterizes the rural personality in one area may change in a few years. This variability and inconsistency is the result of continual changes that take place in economic, social, governmental,

and other actions.

Table 9.1 Frequency of Use of Criteria in Delimiting Urban Populations in National Censuses

Criteria	Frequency of Use	
	Sole Use	Used in Conjunction with other Criteria
1. Size of population	23	26
2. Density of population or housing	1	10
3. Predominant type of economic activity	1	7
4. Urban characteristics other than (1) to (3) above or unspecified urban characteristics	3	13
5. Administrative function or structure, eg. type of local government	3	0
6. None specified	56	0

Source: H Carter, The Study of Urban Geography, (Edward Arnold 1981, p18)

In order to convey a clear picture through which we can distinguish between urban and rural patterns in Saudi Arabia, two important criteria have been taken up.

1. Population Size

The size of the town is actually very important, as it is considered a parameter for the town's status. If a certain place reaches a certain grade on the urbanism scale, it will be labelled

urban. In Saudi Arabia this criterion has been adopted to define the town. The Statistics Department issues a statement to the effect that the Saudi town is defined as a settlement which has more than 5,000 people (Al-Sayed, 1987, p193), whereas the village, is any settlement permanently inhabited by a number of people not less than 100 and not more than 5,000 inhabitants (see chapter 5).

2. The Municipalities Criterion

This factor clearly defines the objective of the current urbanization drive in the kingdom. The municipality departments are the first elements distinguishing the urban centres in the country. The statute concerning their establishment states that some of their functions are to provide public health services, street lighting, water supplies, etc. They also share in the authorities' work in setting up other development services. The General Directorate of the Statistics Department in the country stressed the importance of the municipality departments in giving towns their urban character when he said that the urban are those which are provided by municipality departments (Al Sayed, 1987, p180). Therefore, those towns with municipality departments have been considered as urban centres, particularly where some consulting firms have been asked to draw up plans for them.

Thus in this study, the definition of urban centres is associated with these two criteria, and hence all the settlements with a population size of more than 5,000 people and provided with municipality departments are considered as urban.

9.3 Urban Development in Saudi Arabia: Some General Considerations

The process of urbanization is essential for economic and social development. Gleave (1981, p6) asserts that:

the association between economic development and urbanization identified by large-scale cross-sectional studies implies that change through time in one will be accompanied by adjustment in the other. It can be hypothesized, therefore, that advances in economic development will produce higher levels of urbanization.

In Saudi Arabia, urban development is a recent phenomenon associated with the rapid socio-economic change which has occurred during the last thirty years. Oil revenues have played a significant and vital role in the development of urbanization levels by supplying the necessary support to cut short the long process that urbanization usually requires. The process of urbanization may be classified into three stages of development.

The first stage is associated with the traditional economy before the coming dominance of the oil sector in 1950. During this period, the economy was based essentially on pastoral, subsistence agriculture and simple trades and services. These activities were not sufficient to finance the urbanization process. In 1950, the total urban population only amounted to 10 per cent of the whole population and only five towns had emerged as larger towns in the country. The morphological structure of these towns was very simple, reflecting a less diverse socio-economic base. Makkah and Al Madinah grew as religious centres, Riyadh as an administrative centre, Jeddah as a commercial and pilgrimage seaport, and Taif and Hofouf as agricultural

centres. (Al-Ankary and El-Bushra, 1989, p10)

The second stage of urban development can be considered to cover the period from 1950-1980. In this period, the economy of the country witnessed a rapid transition from a traditional to a modern economy through massive oil revenues (see chapter 3). This in fact has contributed to the success of the stabilization policy, leading to the developments in the economy and outside the oil sector and to improvements in the infrastructural services. Consequently, this rapid economic progress has involved a rapid change from the traditional pastoral life to intensive urbanization and modernization in society. The level of urbanization increased from 10 per cent in 1950 to 45 per cent in 1974. The effect of oil on the urban development process has been noted by Al-Ankary and El-Bushra (1989, p10) who commented:

The impact of oil production on urban growth and urbanization took two forms. First, new towns had to be built in the production areas ... most of these cities still maintain their original functions. Second, the great wealth brought about by the sale of oil came to boost the growth of the already existing major centres such as Riyadh, Jeddah, Makka and Madinah. These large metropolitan centres came to develop complex social and economic structures. The economic base and provision of social services became more diversified and the population more cosmopolitan.

The third stage of urban development began in 1980, when the regional development policy was implemented. According to a World Bank Report of 1988, the proportion of urban population in Saudi Arabia was 72 per cent in 1985. During the third and fourth development plans (1980-90), the policy of urban development centres within the settlement hierarchy was adopted for at national, regional and local

levels (see chapter 3). This stage is to be considered an important phase of urban development. The country was divided into five planning regions, the purpose being to provide master plans for the major cities in each region.

It is obvious that development plans play a leading role in urban development. The basic equipment, represented by public services, transport, education, health care, and many other services, play a significant part in the growth of the cities and towns. Municipalities, on the other hand, are considered as important service centres. Consequently, the concentration of most of the economic and social services in urban centres has significantly affected the rural population, particularly those who live in remote regions. These effects can be seen in the slow growth and stagnation in the agricultural sector and the high rate of rural-urban migration. Al-Ankary and El-Bushra (1989, p7) argue that:

Looking at the urban centres with all the socio-economic developments they may be taken as the core of the Saudi economic system, while the rural sector which has been less-favoured with economic and infrastructural developments may be taken to represent the periphery. This dichotomy into a less developed peripheral rural sector and more developed urban core has generated 'push' and 'pull' factors which in turn have greatly accelerated the process of rural-urban migration.

Clearly, the rapid level of urbanization from 10 per cent in 1950 to 45 per cent in 1974 and 72 per cent in 1985, reflects the high degree of polarization of development in a few major towns such as Riyadh, Jeddah, Makkah, and Dammam, all of which are concentrated in the middle belt regions. Moreover, the growth of these towns is in

fact due to the high share of net migration from peripheral areas. According to a United Nations estimate, 62 per cent of urban growth in Saudi Arabia was due to net migration (Al-Ibrahim, 1982).

This phenomenon was also acknowledged by the Third Development Plan (1980-85) in which it was stated that:

There has certainly been a vast change in the physical environment of all the cities and many of the villages of the kingdom, in the material standards of living, some changes in the style of life, and there have been significant changes in the distribution of population, with a high rate of urban drift and consequent rural depopulation.

However, at the regional level, the stream of emigration originated, as may be expected, from the less developed and predominantly agricultural regions to the urban and more developed regions. According to an official migration survey made in 1973, the southern and northern regions showed net emigration to other regions. For instance, 91 and 78 per cent of the southern and northern migrants moved to urban centres outside their regions (Al-Ibrahim, 1982, p254).

The Third Development Plan (p59) also explains the core and periphery phenomenon in the country, with the significant regional imbalance both in terms of structure of economic activity and of employment. For example, the northern and southern regions had an unduly large share of low productivity occupations with an above-average rate of emigration.

The rural-urban migration, coupled with persistence of the traditional agricultural systems, created serious problems such as

shortages of labour, depopulation of villages, and abandonment of farm land. Al-Ibrahim (1982) noted that in the southern region, the cultivated areas are believed to have decreased by 30 per cent between 1971 and 1977, and the high selectivity of internal migration in terms of age is reflected in the fact that 64 per cent of migrants were in the age group 20 to 44 years.

We may conclude that the level of urbanization has been growing rapidly in the country during the last three decades. This high growth rate has led to excessive polarization not only between the regions but also between urban and rural areas, so that rural areas have been affected negatively by the high rate of rural-urban migration. Since this study is principally concerned with rural development in Jizan province as a means of reducing the imbalance between the urban and the largely neglected rural areas, it is important to determine the role of existing urban centres to see how far these towns serve and benefit the majority of the rural population. Unless measures taken for development reach downward to include small towns, it will not be possible to properly develop and promote the rural areas.

9.4 Urban Growth and Distribution in Jizan Province

In the study of urbanization, as Gleave (1981, p7) has noted, it is customary to distinguish between urban growth (i.e. the growth of the population living in settlements defined as urban) and urbanization proper (i.e. the ratio of urban to total population), remembering always, however, that these concepts are interrelated.

Clearly, the urbanization process, not only in the province but also in the whole of the country, is influenced by comparative advantages or disadvantages perceived in both the rural and urban environment, often referred to as 'push and pull' relations. This makes it reasonable to imagine the usually greater attraction of urban over rural areas as a residual force reflected in the differences of growth rates.

Jizan is the province furthest situated from the urban core of the eastern, central, and western regions. The province is by nature a predominantly agricultural area which makes it distinct from other parts of the country. It is also the least affected by the present rapid urbanization factors. So, for example, the 1974 population census shows that Jizan province was one of the provinces in the country with the lowest urban content. It had an urban population of 2.3 per cent against 45 per cent for the whole of the country. Not only does the province witness a low level of urbanization, but it also manifests a low level of economic activities, having only 2.2 per cent of establishments in the whole of the country.

The salient feature of the urban areas, as shown in table 9.2, is that the province has a low share of economic activities, in fact far below the average. This actually reflects the fact that Jizan province has been relatively unaffected by the rapid development process which served in the rest of the country. Within the province, the table also illustrates the high per centage of establishments and employment, dominated by trade activities, i.e. 76.5 and 47.2 per cent respectively. The second sector (handicrafts, small scale industries

Table 9.2 Number of Establishments and Employees by Economic Activity in Urban Areas in Jizan Province, 1981

Economic Activity	No: of Establishments	%	No. of Employees	%	National Average of Establishments	National Average of Employees
1. Agricultural Activity	4	0.1	38	0.5	25.6	208
2. Manufacturing	357	10.6	1153	14.0	1612.4	1149.1
3. Electricity, Gas and Water	12	0.3	175	2.1	47.3	2261.5
4. Construction	15	0.5	317	3.9	404.8	21265.9
5. Wholesale and Retail Trade	2567	76.5	3878	47.2	6558.5	17949.6
6. Transportation	93	2.8	1118	13.6	491.5	5353.8
7. Finance, etc	26	0.8	872	10.6	407	4084.3
8. Community, Social and Personal Services	281	8.4	661	8.1	1225.6	2507.4
Total	3355	100	8212	100	10772.7	68360.5
% in the whole of the country	2.2		0.8		-	-

Source: Compiled from Census of Private Establishments, Central Department of Statistics, 1981

and construction) accounts for 11.1 per cent of establishments and 17.9 per cent of employment. This in fact indicates that urban centres have not yet developed an industrial function, but subsist mainly by service industries (maintenance and car repair, etc.). Permanent construction jobs account for 3.9 per cent of employment, indicating that Jizan province is still in the early stages of development.

Nevertheless, the province has rural areas with high natural potential for agricultural development. The services related to this sector represent the lowest share of economic activities (only 0.1 per cent of the establishments and 0.5 per cent of employment). This clearly reflects the low impact of urban centres on agricultural development.

Since the province has to be considered as a rural area, there are no larger towns comparable to the middle-belt regions of the kingdom. The available data, found in the 1974 census, indicates that there were no settlements in the province with populations exceeding 50,000 persons, which reflects the fact that urbanization in the province is still in its early stages. In 1974, (fig.9.1) there were only four urban centres (Jizan, Sabya, Abu Arish, and Sametah). Table 9.4 shows that the total urban population was 65,529 persons, or 16 per cent of the total population in the province. Of these, only Jizan centre had a population of over 30,000 inhabitants, or 50 per cent of the urban population. Two centres (Sabya and Abu Arish) had over 10,000 persons, or 20.5 and 18.7 per cent of the urban population respectively. Finally, one centre (Sametah), had over 5,000 persons, or 10.7 per cent of the total urban population.

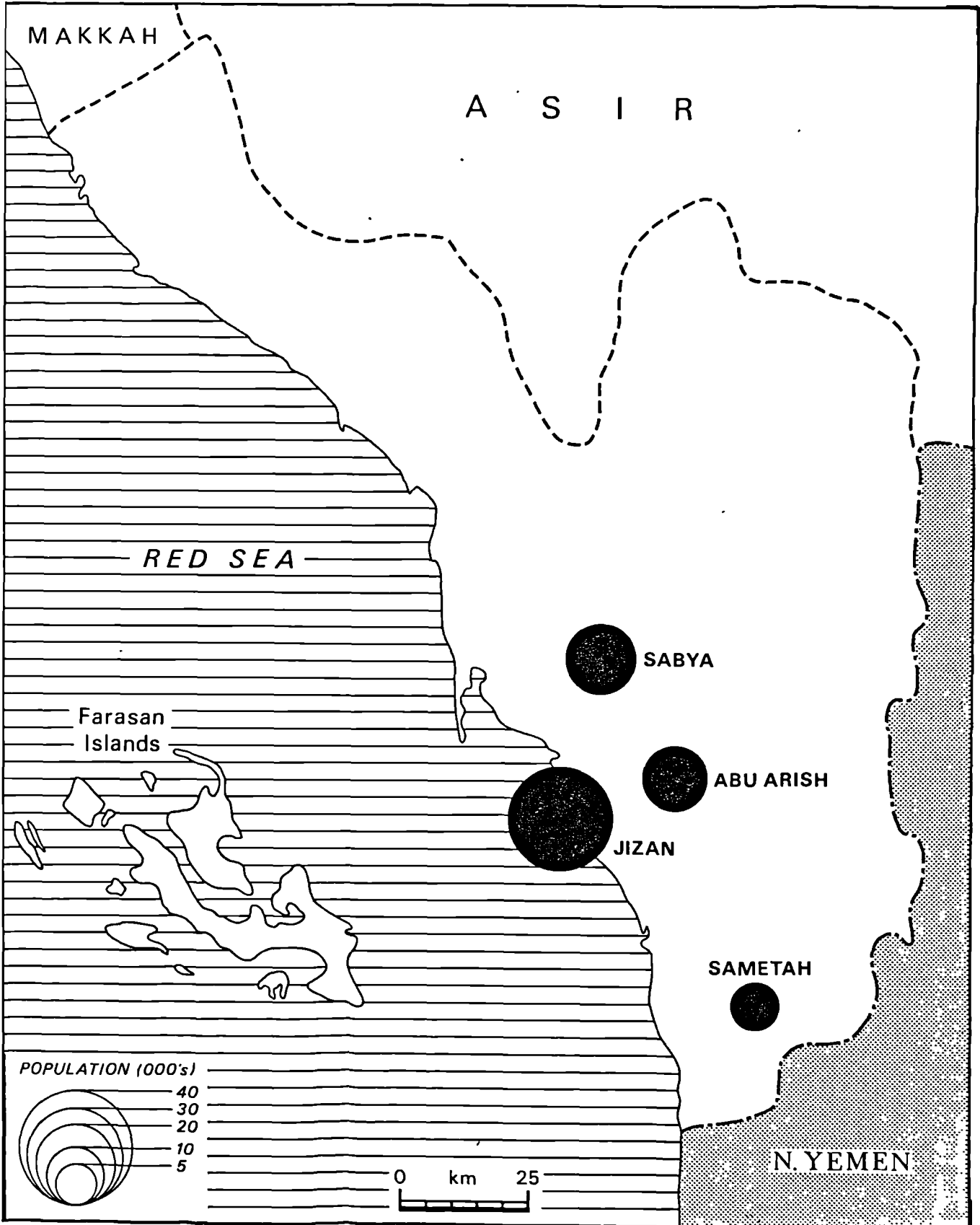


Fig. 9.1

Urban population in Jizan province - 1974
Source: based on Table 9.3

All these urban centres are located in the middle part of the plains area, the pattern distribution of these centres may be examined by the nearest neighbour analysis. This technique will indicate the pattern of urban centres in terms of their arrangement of a set, in order to assess how far these urban centres are distributed in 1974.

The following table 9.3 refers to the pattern of towns and shows a nearest neighbour index of $R = 1.25$. This value, with chosen 0.05 significance level and 4 points for one tailed test, is therefore 1.43. Since the calculated R is less than the critical value, the null hypothesis of randomness can be accepted. This means that the arrangement of town locations can be considered to be significantly random in the province in 1974.

The degree to which the 4 urban centres are integrated in 1974, will be examined by the connectivity indices. The degree of connection between nodes is defined as the connectivity of the network. Two of the most commonly employed graph-theoretic measurements of connectivity are the gamma and alpha indices. The gamma index is simply the ratio of the number of edges (linkages) in a network to the maximum number possible in a given network while the alpha index is a ratio measure of the number of actual circuits (Taaffe and Gauthier, 1973). Table 9.6 shows that the gamma index of the urban centre network in 1974 was 0.50 per cent, while the alpha index shows 0. This means there was no circuitry network, because the network system was designed to provide the minimal or necessary connectivity in that time (see fig.9.2).

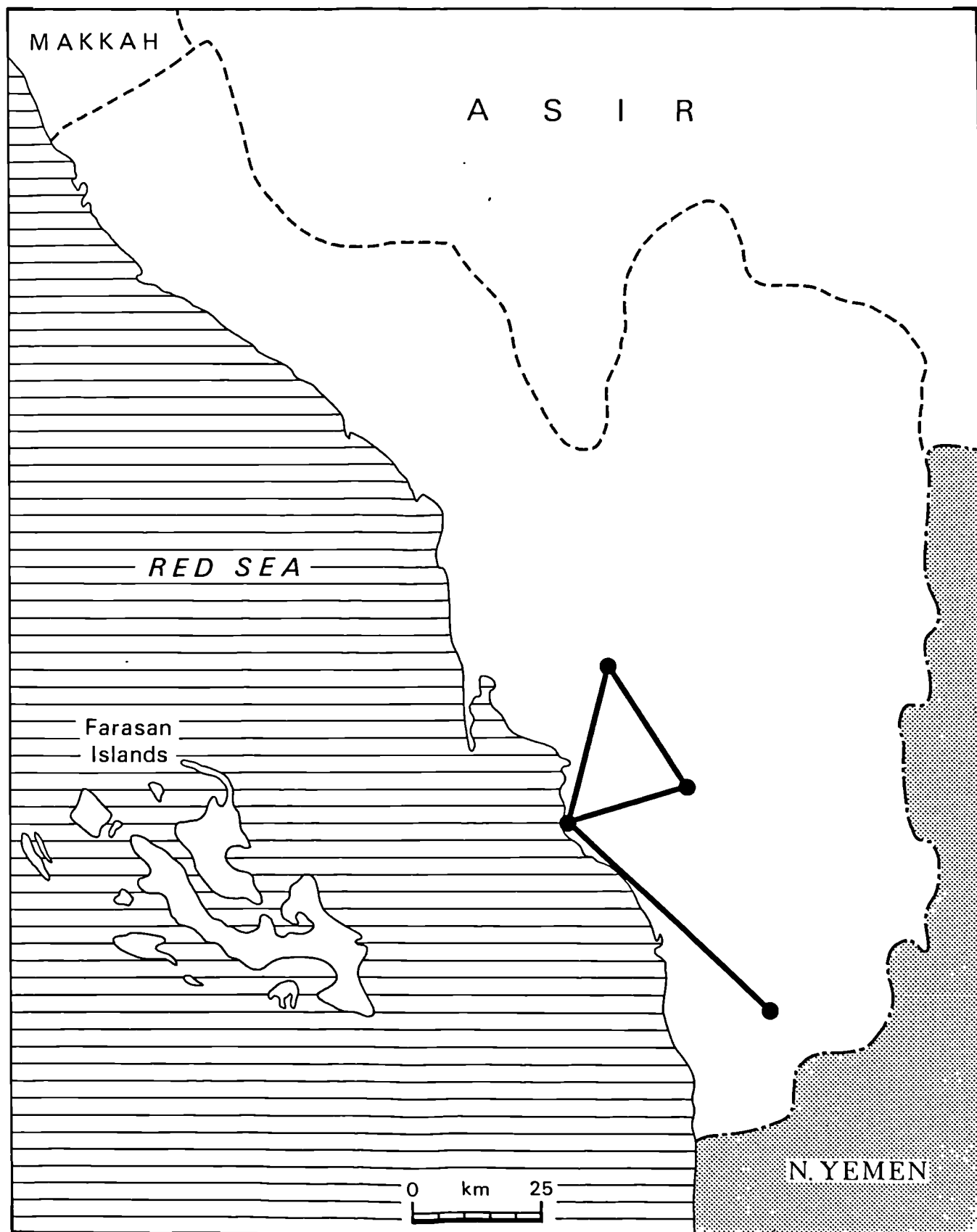


Fig. 9.2

Urban system in Jizan province - 1974

Table 9.3 Calculation of Mean Nearest Neighbour Distance for the Urban Centres in 1974

Centre	Nearest Neighbour	Nearest Neighbour Distance (km)
Jizan	Abu Arish	35
Abu Arish	Sabya	32
Sabya	Abu Arish	32
Sametah	Abu Arish	49
N = 4		d = 148

$$r_a = \text{average distance} = \frac{148}{4} = 37$$

r_e = average expected distance calculated as follows:

$$r_e = \frac{1}{2\sqrt{N/A}} \quad \begin{array}{l} N = \text{number of centres} \\ A = \text{study area size (km}^2\text{)} \end{array}$$

$$= \frac{1}{2\sqrt{4/14000}} = \frac{1}{0.0338} = 29.585$$

$$R = \frac{r_a}{r_e} = \frac{37}{29.585} = 1.25$$

Obviously, since the onset of the government's development plans in Jizan province, the urban system has changed since 1974. Indeed, this change not only includes the increased number of urban centres, but also the transportation linkages between them. Gleave (1981, p10) observed that:

with the urban centres as the nodes and the transport connection between them as the links the shape of the network can be changed either by infilling or by extension. Infilling occurs when new nodes appear along links between existing nodes. Extensions occur when new nodes enter the network outside the existing framework of nodes and links.

Obviously, the change in the shape of the urban system between 1974 and 1989 was by extension of the system. Two urban centres have entered the system, namely Baish and Fayfa (see figs. 9.3 and 9.4). These towns are local administrative centres, having rural weekly markets and high order services such as hospitals, secondary schools, and municipality departments. In 1989, the urban population (see table 9.4) had increased to 161,000 persons, or about 31 per cent of the total population. This indeed indicates that the population of the urban centres has more than doubled within 15 years. This positive growth seems to be associated with three factors:

- the slow growth and stagnation in the agricultural sector;
 - the recent rapid growth of the services in a few urban centres;
- and
- the developing of road transport.

Clearly these urban centres come to be perceived as attractive places and their growth is greater because they are not only the centres for people who seek urban services and better living conditions, but above all because of employment opportunities, whether in the public or the private sector. They become the places of basic opportunities of employment related to regional government, regional trade and other functions of regional scope.

Table 9.4 Distribution of Urban Population by Size of Settlements between 1974 and 1989

Centre	1974		Centre	1989	
	Urban Population	%		Urban Population	%
Jizan	32792	50	Jizan	57000	35.4
Sabya	13462	20.5	Sabya	36000	22.4
Abu Arish	12272	18.7	Abu Arish	25000	15.5
Sametah	7003	10.7	Sametah	21000	13.0
			Baish	16000	10.0
			Fayfa	6000	3.7
Total of Urban Pop.				65529	161000
%	16	100		31	
100					

Source: Compiled from 1974 Population Census, and Estimation of Urban Population by Municipalities of Urban Centres, 1989

Jizan centre shows a high proportion of urban population (35.4 per cent). Sabya comes second with 22.4 per cent of the total urban population. Abu Arish is the third centre with 15.5 per cent, followed by Sametah with 13.0 per cent and finally by Baish and Fayfa with 10 and 3.7 per cent respectively.

The pattern of distribution of the urban centres in 1989 can be examined by the nearest neighbour analysis. This technique provides a very useful descriptive measure of point patterns, particularly for quantifying the increase or decrease in dispersion or clustering of a pattern through time, provided the definition of the study area remains the same (Ebdon, 1987, p148). In the same manner as for 1974, the value of the nearest neighbour statistic R is found to be 1.74 and the

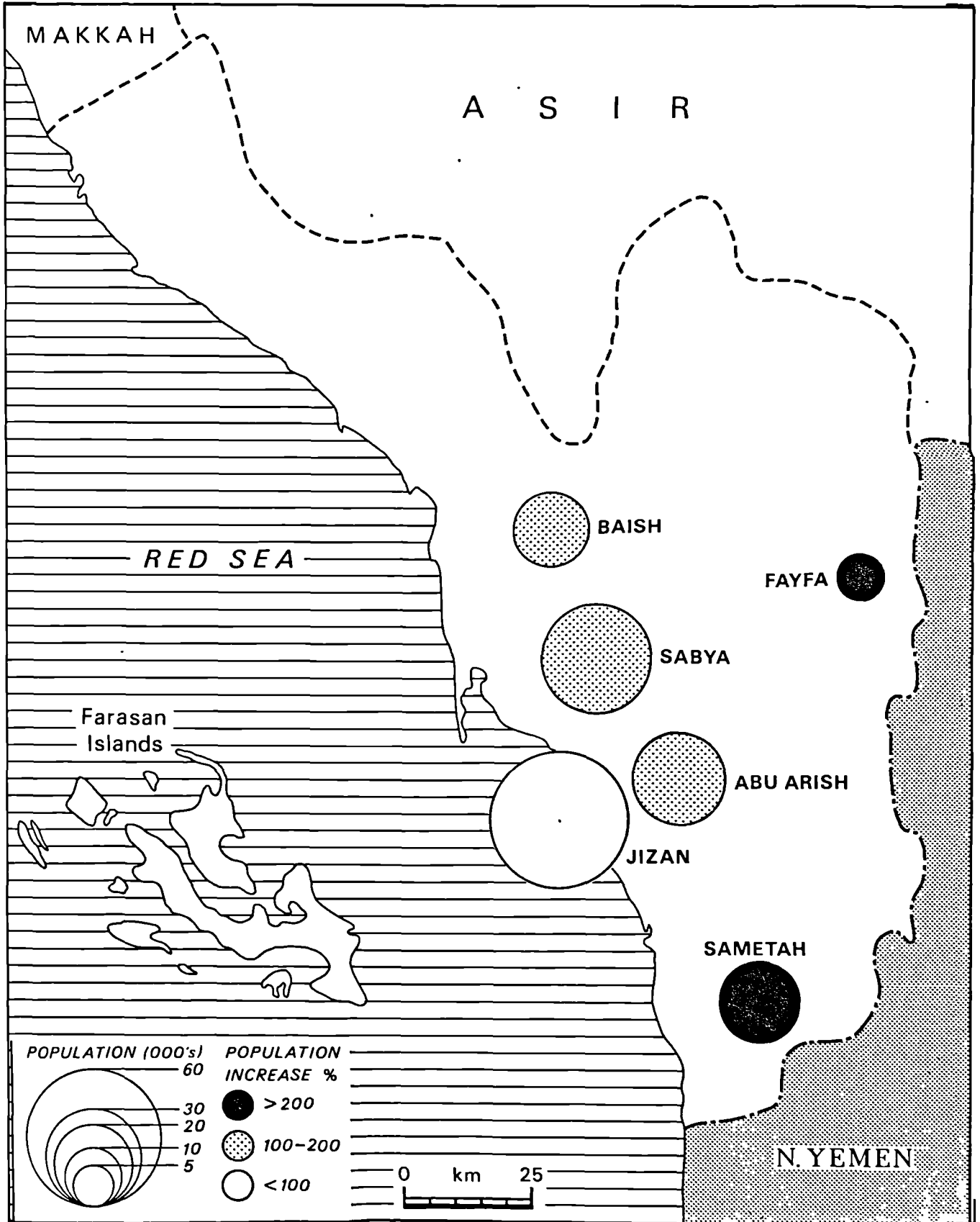


Fig.9.3 Urban Population Change between 1974 and 1989 in the Province

Source: Based on table 9.3

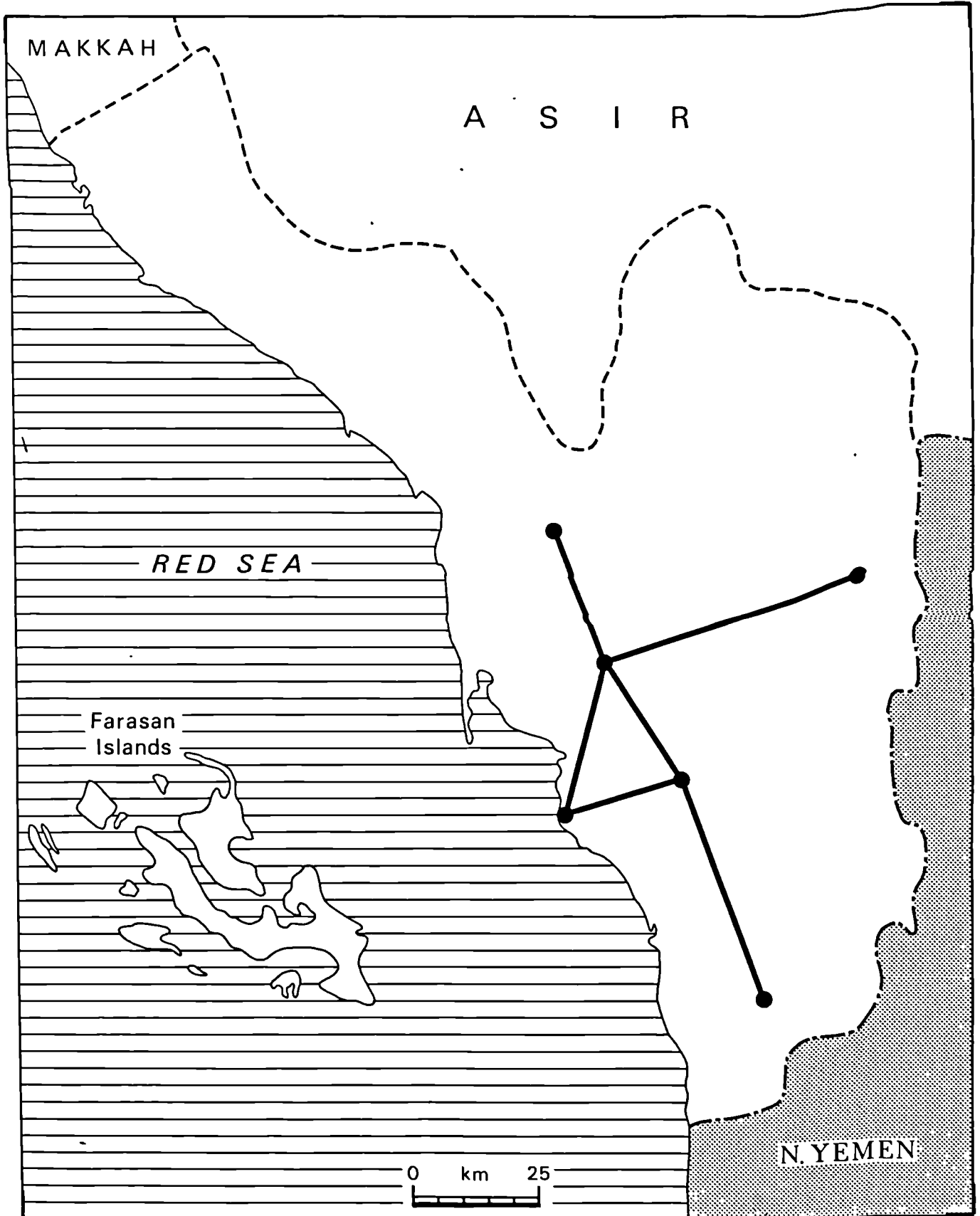


Fig.9.4 Urban System in Jizan Province in 1989

chosen significance level is 0.05. The appropriate critical value of R for a dispersed pattern in one tailed test is found to be 1.35. Since the calculated R value is larger than critical value, then the pattern of distribution of urban centres in 1989 tends towards dispersion. So, it may be definitely concluded that the entry of new urban centres has changed the pattern of distribution of urban centres to one of greater dispersion compared with the 1974 distribution. Because the number of urban centres has increased, and the number of transportation linkages has also increased, the connectivity of the network has changed. The gamma and alpha indices can be used in order to identify the degree of change. Table 9.6 shows that the gamma index changed from 0.50 per cent in 1974 to 0.58 per cent in 1989, and that the alpha index also changed from 0 in 1974 to 0.28 per cent in 1989. These increases reflect the fact that the network becomes more structurally complex between urban centres.

Table 9.5 Calculation of the Mean Nearest-Neighbour Distance for Urban Settlement in 1989

Centre	Nearest Neighbour	Nearest Neighbour Distance (km)
Jizan	Abu Arish	35
Abu Arish	Sabya	32
Sabya	Baish	31
Baish	Sabya	31
Sametah	Abu Arish	49
Fayfa	Sabya	76
N = 6		d = 254

$$ra = \frac{254}{6} = 42.33$$

$$re = \frac{1}{\sqrt{6/14000}} = \frac{1}{0.0041} = 24.39$$

$$R = \frac{42.33}{24.39} = 1.74$$

Table 9.6 The Connectivity Indices between Urban Centres in 1974 and 1989

Year	% of gamma indices	% of alpha indices
1974	50	0
1989	58	28

Note: For details about gamma and alpha indices calculation, see E Taaffe and H Gauthier, Geography of Transportation, Foundations of Economic Geography Series (1973), chapter 4.

9.5 Urban Settlements Hierarchy in Jizan Province

Until the present, the development of a settlement hierarchy in Jizan province is still inadequately distributed and articulated. There are few urban centres and their hierarchy is identical to the top-down model which has been discussed in chapter 3. According to this model, there are two tiers of urban settlement which have been identified in the province (see fig. 9.5).

The first level consists of the largest urban centre of Jizan at the apex of the settlement hierarchy, having a population of more than 57,000 persons in 1989. Evidently, this centre ranks at the second or regional level in the national urban hierarchy and it might be expected to be the "growth pole" in the province because it is unique in the

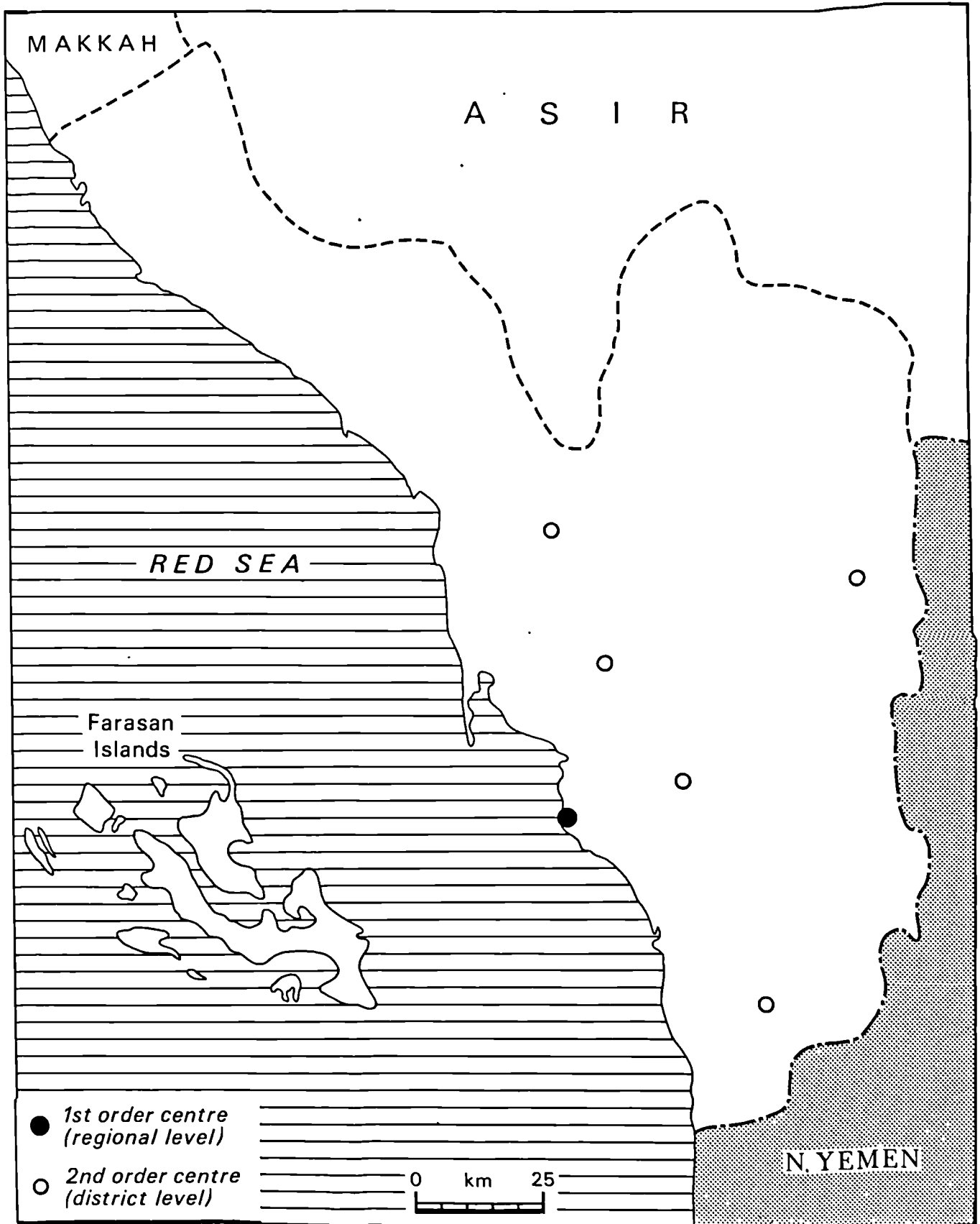


Fig.9.5 Existing Urban Settlement Hierarchy in Jizan Province as presented by Third Development Plan

Table 9.7 Number of Government and Non-Government Establishments in Urban Centres of Jizan Province, 1981

Centre	Government Est.	%	Non-Government Est.	%	Total	%
Jizan	131	42.8	1586	42.8	1717	42.8
Sabya	69	22.5	749	20.2	818	20.4
Abu Arish	37	12.0	514	13.9	551	13.7
Sametah	30	10.0	394	10.6	424	10.6
Baish	24	7.8	387	10.4	411	10.2
Fayfa	15	4.9	74	2.0	89	2.2
Total	306	100	3704	100	4010	100

Source: Compiled from the Census of Private Establishments, Central Department of Statistics, 1981, p182

province and serves as an important centre not only for the concentration of administration offices, but also for commercial activities. Table 9.7 shows that Jizan centre dominates with 43 per cent of the total number of government and non-government activities in urban centres. This means it is the major town for administration and business in the province. Moreover, the town has also the most important airport and seaport in the southern region. The town is connected by major roads to the northern provinces of Asir and Al Hijaz and in the south to Yemen, which has made it an important centre for commerce and travellers.

Clearly, all these factors have demonstrated the importance of government offices in influencing the shaping of the urban system's development. The concentration of private sector social and commercial activities in the town has been influenced by the effects of the increasing concentration of publicly funded government administrative services at a high level. Therefore, from the functional viewpoint, the hypothesis may be made that the city should play two significant planning roles. Firstly, because of its function as the provincial capital, it should play a part in the important strategy of integrating the province with others at the national level. Secondly, with its high level of growth and functions, Jizan should be at the forefront of a strategy for spatial planning within the province.

The second level consists of the five larger urban centres in the province namely Sabya, Abu Arish, Sametah, Baish, and Fayfa. This level has been considered as a third or district level in the national urban hierarchy model. The population of these towns varies between

6,000 persons in the case of Fayfa and 36,000 persons in Sabya.

Obviously, this level performs a wide and large number of commercial and administrative functions, typical of which are hospitals, daily and weekly markets, banks, secondary schools, and long-distance telephone services. All are provided with municipality departments and they are connected by major asphalted roads. Moreover, Sabya and Abu Arish dominate in the high level of education since the teaching colleges for boys and girls are both located here.

Table 9.7 shows that Sabya town qualifies as the second urban centre in the province with 20.4 per cent of the total government offices and commercial activities. Its population grew from 13,000 inhabitants in 1974 to reach more than 36,000 in 1989. Its expansion is not only related to its past role as a regional capital, but to the fact that it also has a large catchment area with very good agricultural lands. Furthermore, its location on the major roads makes it an important centre in the northern part with a very active trade attracting traders to its weekly and daily markets.

Abu Arish qualifies as the third urban centre with 13.7 per cent of government and non-government activities. The town is located in the middle of the plains, 35km east of the capital of the province, in the richest agricultural area where the dam of Jizan is located. Currently the town is connected by major roads to Sabya and Sametah. The population of the town has increased from 12,000 persons in 1974 to approximately 25,000 in 1989. The fourth rank is Sametah with 10.6 per cent of total activities. It is located in the southern part of the

province. Its population was 7,003 persons in 1974, but more recently it has grown to more than 21,000 persons. It has evolved from a small town into an important centre in the southern part of the province. This rapid growth may be due to its relatively populated catchment area. The town also lies on the major road leading to Yemen, which has enabled it currently to develop modern trade supporting facilities. Besides these factors, Sametah acts as an important weekly and daily market for the southern part and has been distinguished as a traditional and educational centre for a long time.

The fourth urban centre in this level is Baish which accounts for about 10 per cent of the total activities in urban centres. Its population has increased from 6,000 persons in 1974 to approximately 16,000 persons in 1989. Baish is located in the northern part of the province with a large agricultural area irrigated by the valley of Baish. It also lies on the regional road linking Jizan province with the rest of the country. Indeed, the agricultural wealth, the traditional weekly market, the road connections, and the government services have permitted the development of this town to the status of an important urban centre at the northern end of the province.

The last ranking urban centre is Fayfa, an important centre in the mountain area, which accounts for a slight proportion of the activities (2.2 per cent). Its population grew from a small centre with less than 1,000 inhabitants in 1974. to about 6,000 inhabitants in 1989. This may be due to the concentration there of most of the government services, which attracted the rural population in scattered settlements and cause them to migrate to this town for work and to

benefit from services. Moreover, Fayfa has a pleasant climate and also tourist interest. Indeed, the provision of asphalted roads has increased the commercial activity and visits of travellers to this town.

It may be concluded that, from the functional viewpoint of these urban centres, they could act as large urban markets where consumers are able to obtain finished or semi-finished goods produced at the rural markets. Moreover, they could play important roles as centres for services and facilities that cannot be provided in lower levels of the settlement hierarchy, as well as operating as centres for the absorption of migrants, and centres of employment for those people whom small towns cannot offer opportunities of work. Generally, these towns should be the full-grown urban centres in the province.

9.6 Urban-Rural Relationship in Jizan Province

The two existing urban settlement hierarchies in Jizan province are indeed inadequate for an effective and comprehensive development policy. Clearly, this model of hierarchy has left out the roles of small towns with populations of 5,000 and below. These towns are the centres where the majority of the rural population live and work, and have contact in their everyday activities.

Thus Jizan province includes about 927 villages scattered throughout the landscape of the province and six larger urban centres. This means that there would be one centre for 154.5 villages. Indeed, this high ratio of urban centres to villages reflects two important

issues. First, there is an inadequate number of central places, and second, there is evident weakness of the urban centres in serving all the rural villages in the province, particularly with the lack of sufficient distribution of roads or public transport. As shown in chapter 7, 16 per cent of the total number of villages were connected by asphalted roads, while 84 per cent of villages were served by sandy or rock-track roads. In the following analysis, an attempt is made to discuss the relationship between urban centres and rural areas. Clearly, one important indicator showing how far the rural population can benefit from the availability of services in urban areas, would be the number of visits made by people to these urban centres. The first issue to be discussed is the relationship between rural areas and Jizan centre as the major headquarters of the province, where most of the government offices and commercial activities are located.

Table 9.8 shows that a high proportion of villages are separated from this town by long distances. Only about 5 per cent of the total villages are at distances of less than 20 km, 15 per cent of villages are at a distance of between 20 km and 40 km, 32.6 per cent of villages are at distances of between 40 and 60 km, and about 47.5 per cent of villages are at distances of more than 60 km. Unfortunately, the long distances, coupled with inadequate paved roads and public transport, do affect travel to and from Jizan centre.

Table 9.8 Distances of Villages from Jizan Centre

Distances in km	No. of Villages	% of villages	Cumulative
1 - 20	45	4.9	4.9
21 - 40	137	15.0	19.9
41 - 60	298	32.6	52.5
61 - 80	185	20.2	72.7
> 80	250	27.3	100
Total	915	100	-

Source: Derived from Villages Survey 1983, and Road Map of the Province, 1989

In the study of sample villages spread over the plains, hilly, and mountain areas, the respondents were asked about the frequency of their visits to Jizan centre. The results of this enquiry are represented in table 9.9. The chi-square test can be used to examine the relationship between the three above areas, and the frequency of visits made by respondents. The null hypothesis is that there are no differences between the sampled respondents in the three areas. The alternative hypothesis is that there is a significant difference between the respondent sample in terms of their visits. The calculation value of chi-square is 31.55, and the critical value at 0.05 significance level with 6 degrees of freedom, is 12.59. Since the value of chi-square is greater than the critical value, the null hypothesis must be rejected. This means that there is a difference between sampled respondents in terms of their visits to Jizan town.

It is clear that the rural population in the plains area visit Jizan town more frequently than do people in the hilly and mountain

Table 9.9 Chi-Square Test for Frequency of Visits to Jizan Town according to Respondents

Frequency of Visits	Plains area			Hilly Area			Mountain Area			Total
	resp. frequency	% expected frequency	resp. frequency	% expected frequency	Resp Frequency	% Expected Frequency	Resp Frequency	% Expected Frequency		
less than a week	23	34.3 (15.25)	5	11.9 (9.56)	0	0 (3.19)	0	0 (3.19)	28	
1 - 2 weeks	26	38.8 (20.70)	11	26.2 (12.98)	1	7.1 (4.33)	1	7.1 (4.33)	38	
2 weeks - one month	11	16.4 (17.43)	16	38.1 (10.93)	5	35.7 (3.64)	5	35.7 (3.64)	32	
> one month	7	10.5 (13.62)	10	23.8 (8.54)	8	57.1 (2.84)	8	57.1 (2.84)	25	
Total	67	100	42	100	14	100	14	100	123	

Chi-Square = 31.55 d.f. = 6 Significance level at 0.05 = 12.59

Source: Fieldwork Survey, 1989

areas. For instance, more than 34.3 per cent of the rural population in the plains area visit Jizan town less than once a week, while on the other hand, only 11.9 per cent of respondents in the hilly area and no respondents in the mountain area have the same frequency. In addition, 38.8 per cent of respondents in the plains area visited Jizan centre at least once every 1 to 2 weeks compared to 26.2 and 7.1 per cent in the hilly and mountain areas respectively who had the same frequency. Finally, only 26.9 per cent of respondents in the plains area visit Jizan town more frequently than once every two weeks, compared to 61.9 and 92.8 per cent in the hilly and mountain areas respectively.

So, these results reflect the fact that people in the plains area, particularly those who live close to urban centres such as the villagers of Al Asamilah, and Al Hqrjah, are situated close to Jizan town, so that some of them go into Jizan town for work and for government services. On the other hand, rural inhabitants of the margins of the plains area (such as the villagers of Al Baisiri, Al Arjain and Al Hajanbah) as well as the inhabitants of the hilly and mountain villages have greater difficulty in travelling into Jizan town more frequently.

It is also important to examine the relationship between the villages and the other towns (Sabya, Abu Arish, Sametah, Baish, and Fayfa) in order to present a clear picture of the relationship between urban and rural areas. Table 9.10 shows that only 27.5 per cent of villages are situated at distances of less than 10 km from the nearest urban centre, whilst 21.4 per cent of villages lie at a distance of between 11 and 20 km. This means that only 48.8 per cent of villages

are at a distance of less than 20 km compared to 51.1 per cent of villages at distances of more than 20 km, 29.9 per cent of villages at distances of between 21 and 40 km, 16 per cent between 41 and 60 km, and 5.2 per cent at a distances of more than 61 km.

Table 9.10 Distances of Villages from other Urban Centres in Sabya, Abu Arish, Sametah, Baish, and Fayfa

Distances in km	No. of Villages	%	Cumulative %
1 - 10	252	27.5	27.5
11 - 20	196	21.4	48.9
21 - 30	187	20.5	69.4
31 - 40	86	9.4	78.8
41 - 50	78	8.5	87.3
51 - 60	69	7.5	94.8
> 60	47	5.2	100
Total	915	100	-

Source: Derived from Village Survey, 1983, and Road Maps of the Province, 1989

One important factor indicating how far the rural population have access and easy contact with these urban centres would be the frequency of visits that they make to these towns. Respondents in the sampled villages were asked about their trips' frequency and the results of this enquiry are listed in table 9.11.

The chi-square test can also be used to examine the relationship between the three areas in terms of the frequency of their visits to urban centres. The null hypothesis is that there is no difference between sampled respondents in the plains, hilly, and mountain areas in terms of the frequency of their visits to urban centres. The

alternative hypothesis is that there is a real difference in incidence of urban visits. The calculated value of chi-square is 18.75 and the critical value at 0.05 significance level with 6 degrees of freedom is 12.59. So, since the calculation of chi-square is greater than the critical value of 0.05 level significance, the null hypothesis can be rejected. Thus we are able to accept the alternative hypothesis that indicates a real difference between sampled respondents in the plains, hilly, and mountain areas in the frequency of their inhabitants urban visits.

Table 9.11 shows that the rural population in the plains area visited urban centres more frequently than did those in the hilly and mountain areas. For instance, 71.6 per cent of respondents in the plains area visited urban centres less than once a week, while 54.8 and 21.4 per cent in the hilly and mountain areas respectively had the same frequency. In addition, 21 per cent of respondents in the plains area visited urban towns at least once every 1 to 2 weeks compared to 21.4 and 50 per cent in the hilly and mountain areas respectively. Finally, only 7.5 per cent of plains area respondents visited urban centres as frequently as every two weeks to one month, while in the hilly area 16.7 per cent had the same frequency and 7.1 per cent of their visits were made at intervals of over one month. In the high mountain area there were 14.3 per cent of respondents whose frequency of visit ranged between once every two weeks and at intervals of over one month.

Clearly, the above analysis indicates that the rural population of the hilly and mountain areas experience difficulties of access to urban centres, compared with the rural population who live in the

Table 9.11 Chi-Square Test for Five Urban Visits by Respondents in Sabya, Abu-Arish, Sametah, Baish, and Fayfa

Areas	Plains area		Hilly Area		Mountain Area		: Total
	resp. frequency	% expected frequency	resp. frequency	% expected frequency	Resp. Frequency	% Expected Frequency	
less than a week	48	71.6 (40.31)	23	54.8 (25.27)	3	21.4 (8.42)	74
every 1 - 2 weeks	14	20.9 (16.34)	9	21.4 (10.24)	7	50 (3.41)	30
2 weeks - one month	5	7.5 (7.63)	7	16.7 (4.78)	2	14.3 (1.59)	14
less frequently than one month	0	0 (2.72)	3	7.1 (1.71)	2	14.3 (0.57)	5
Total	67	100	42	100	14	100	123

Chi-Square = 18.75 d.f = 6 Significance level at 0.05 = 12.59

Source: Fieldwork Survey, 1989

plains area, particularly those around urban centres. In fact, rural populations around urban centres not only have readier access to urban facilities, but they also make greater use of them. As indicated in chapters 7 and 8, people who live closer to urban centres are on average much better provided for than those living in the remote rural areas. The evidence shows that facilities for education, health, and social services are of a far superior standard than they are in the marginal rural areas.

In fact, the wide difference between urban and rural areas can be indicated by the purpose of visits. The respondents were also asked about their purpose of visits to urban centres. Table 9.12 shows that the major purpose of such trips, reported by 57.5 per cent of respondents, was to benefit from the government services. The purpose of work came second as reported by 20.3 per cent of respondents, buying and selling came third as reported by 13.8 per cent of respondents, and 8.2 per cent reported that they came for yet other purposes.

Table 9.12 Purposes of Trips to Urban Centres according to Respondents

Purposes of Visits	No. of Respondents	% of Respondents
For Government Services	71	57.7
For work	25	20.3
Buying and Selling	17	13.8
Others	10	8.2
Total	123	100

Source: Fieldwork, 1989

Obviously, the level of urbanization, not only in the province but also in the whole of the country, has been affected by the new economic changes. The impact of the oil revenue has increased the civil services in the urban centres. The result is that there is a rapid growth of investment towards non-productive sectors such as services, commodities, trade, construction, and land speculation. This in fact has led to the rural population hanging around the government and private offices seeking jobs. These activities have, however, had little effect on rural developments, except in the agro-services activities. People in these towns look to high-order urban centres for a high quality of commercial and other services such as automobile services, electrical workshops, supermarkets, high-class furniture stores, photography, watch retailing, etc. All these activities have limited use and effect on the rural population who live in remote areas with low levels of income and low standards of living conditions. Rajab (1978), argued that the economy of urban centres does not depend on their local resources and that the income of their work force is not directly attributed to productive areas, but rather it is attributable to the civil services whose huge budget has nothing to do with their local potentials. In other words, funding derives from the general national budget.

Obviously, the low level of urbanization in Jizan province has resulted in a heavy concentration of development resources in a few larger urban centres. These high concentrations of investments have not trickled down, but they have created a backwash effect and wide disparities between the few urban centres and larger rural areas. Figure 4.9 shows that there is no balance in the urban distribution, as

people in the south-east, south-west and north of the plains area, as well as those in the hilly and mountain areas, have no easy access to those existing urban centres.

Consequently, rural to urban migration has emerged as one of the rural problems. The push factors of the rural areas are associated with pull factors of urban towns, which have made urban centres grow rapidly at the expense of agricultural productivity and rural development. Clearly, to solve the rural problems of Jizan province, the urban levels should be extended to include the roles of small towns in order to perform a comprehensive network of settlements and to provide different functions in rural areas as well as to link the rural areas with urban centres. Johnson (1976, p171, 173) explained the impact of missing central places in developing countries when he wrote:

lack of strong incentives for increased output and waste of human resources are only the most glaring consequences of an inadequate number of central places.

Moreover, Rondinelli (1980, p336) referred to the decentralization of urban strategy in developing countries when he suggested that:

A decentralized urbanization strategy seems essential to promote growth with equity in the two types of economics prevalent in Asia: In those countries where urbanization has been slow and where cities have not yet emerged as important points of non agricultural production and exchange, and in those countries where urbanization has been rapid, but highly concentrated in primate cities. In the former case dispersed urbanization is needed to accelerate rural development and in the latter to create an articulated spatial system capable of absorbing and further promoting development impulses already strong in urban enclaves.

From the above discussion, it is clear that it is important to develop the lower level of settlement hierarchy. For planning purpose in Jizan province, it is expected that the roles of small towns would constitute a vital approach for the developing and promoting of rural areas. In chapter 11 there is a more detailed discussion concerning the extension of the settlement hierarchy according to the potential of small towns.

9.7 Conclusion

The economic changes in Saudi Arabia have had a remarkable effect on the process of urbanization. This recent phenomenon has divided the spatial structure of the country into an urban core (particularly in the middle regions) and the peripheral areas in the southern and northern parts of the country.

The position of Jizan province as a remote rural area situated far from the dynamic and more developed regions as is indicated by characteristics discussed in previous chapters, is witnessed also by its low level of urbanization. Only a few centres have emerged as urban places. Jizan town constitutes a provincial headquarters with a high concentration of services. Sabya, Abu Arish, Sametah, Baish and Fayfa have emerged as larger urban centres and act as second grade towns in the province. The urban population in the province has also increased from 16 per cent of the total population in 1974 to 31 per cent in 1989.

The evidence shows that the existing polarizing effect of urban

centres is not balanced, since they are concentrated in the middle part of the plains area, while the rest of the province is not within easy reach of any major towns. Moreover, tertiary activities are the most common functions of these urban centres which have only a marginally significant effect on the rural development in general and agriculture in particular.

Consequently, the rural populations's visits to these towns are limited and indeed they have nothing to do in these towns, because most of the economic activities there are for the benefit of middle and high-class business men. In addition, these urban centres also provide some services in their capacity as central places, such as hospital facilities, high school education, teaching colleges (Sabya and Abu Arish), municipalities, and other services, but the majority of people who use these facilities live in urban areas, while people in the remote rural areas experience difficulty of access to those services.

It may be concluded that the urban development in Saudi Arabia has not benefited Jizan province in general, and within the province the few urban centres have no direct impact on rural development. Therefore, the development of small towns which are distributed over the landscape of the province would play a significant role in the extension of urban modernization on the one hand, providing economic and social services to the majority of the population in rural areas, and leading to an integration of the urban with rural areas on the other hand. The next chapter will discuss the policy behind the development of small towns in Jizan province.

PART THREE
CHAPTERS 10 - 13

CHAPTER TEN

The Assessment Policy Behind the Development of Small Towns

10.1 Introduction

From the discussion of urbanization in the previous chapter, it is clear that the development policy in Jizan province has concentrated on a few major urban centres. Meanwhile, the small towns with less than 5,000 inhabitants, which may be assumed to be the most important levels for rural development, have been generally neglected or only marginally developed. Unfortunately, this policy has not only failed to bring the development process to rural areas, but has also increased the disparities between urban and rural areas and encouraged the rural population to make their exodus towards urban centres.

The evidence shows that high levels of income and literacy as well as better quality housing and other indicators of development, are associated with urbanized area rather than with the rural areas where the societies are poor and closely related to subsistence levels of agricultural productivity. Moreover, rural areas also show a lack of employment opportunities with high rates of illiteracy, incidence of disease, and poor housing conditions and sanitation. Therefore, for rural development, a policy supporting and leading to urbanization should be adopted, because urbanization is the most important pre-condition for stimulating development growth in rural areas, by spreading the development services and facilities to lagging rural areas.

Obviously, in the area studied, the lack of a sufficient number of lower levels of urban centres has led to inadequate distribution of development services to the majority of the rural population. In response to this problem, the extension of lower levels of urban hierarchy, i.e. increasing the number and improving the spatial distribution of small towns so that they may act as rural services centres, has been suggested as an appropriate regional and rural development policy for Jizan province.

On the basis of the rural problems identified in details in chapters six, seven, and eight, a small towns policy would be capable of stimulating and increasing agricultural productivity, providing and improving accessibility by the rural population to benefits from the development services, creating new opportunities of employment, reducing the rural exodus to urban centres, and providing a framework for an integrated settlement hierarchy. The following analysis will demonstrate the relevance of the policy of small towns for promoting and developing rural areas of Jizan province.

10.2 Small Towns and Development of the Rural Economy

There is disagreement between economists as to whether priority should be given to agriculture or industry in rural areas. Hodder (1968, p158) notes three widely divergent viewpoints. First, there is the view that increased agricultural production is the only sure foundation for successful industrialization at a subsequent state in the development of an economy. A second point of view is that only a rapid increase in industrialization can ever enable a developing

country's economy to break out into something approaching that of a developed country. Finally, and somewhere in between the other two standpoints, is the view that agricultural and industrial development planning cannot usefully be considered separately, and that in development planning they are equally important.

Indeed, there is a strong relationship between the development of agriculture and industry, because we need industry to provide agriculture with mechanization, inputs, and technology, while on the other hand, we need progress in the agricultural sector in order to provide industry with food, raw materials, and markets. Streeten (1979, p284) makes this assertion when he says:

The dispute about whether to give priority to industry or agriculture is a sham dispute. The answer is not either/or, but both/and. Industry needs agriculture and agriculture needs industry, and for some purposes the very division into the two categories is wrong.

Rondinelli and Ruddle (1978, p107) also assert the relationship between the two sectors.

Experience in developing nations testifies the close relationship between agricultural productivity and rural industrialization. Farmers will simply not produce more unless they can market and receive a fair price for their goods and obtain fertilizer and other inputs needed to increase output.

It is clear that agricultural and industrial developments are related, and since Jizan province is an agricultural area, industrial activities will be dependent on agricultural improvement. It is not profitable to produce agro-industrial manufactures unless the

agricultural production is improved. So, successful launching of agro-industrial activities depends upon improvement of the agricultural sector in order to feed the secondary and tertiary activities.

10.2.1 Agricultural Development

Agriculture is the fundamental economic sector in Jizan province, the major proportion of whose population live in rural areas and are engaged primarily in subsistence agricultural activity. The welfare of these people depends exclusively on the growing of crops by methods, techniques, and practices which have been handed down from generation to generation. These methods have not, however, permitted the farmers to obtain maximum production from their efforts.

Obviously, with economic change and various opportunities being undertaken as a result of oil revenues, a considerable number of farmers have left for urban areas. Moreover, the new socio-economic changes have created new demands for food and many other items with new requirements for life. This sector has in general been characterized as a traditional sector, employing a large number of people with minimal production. Consequently, the majority of farmers present a gloomy picture of poverty with low levels of income, a high rate of illiteracy and malnutrition, and low standards of living. The problems of agricultural development have been discussed in Chapter Six.

Nevertheless, the agricultural sector is still the major element in the economy of Jizan province, and dominates the lives of more than half of the population. Therefore any significant rate of economic

development is hardly attainable without accelerated improvement of this sector. The main objectives in improving this sector may be described as follows:

- * To make the province more productive in its basic food requirements, such as cereals, vegetables, fruits, livestock, and poultry.
- * Efforts should be made to improve the social status of rural farmers through increasing their agricultural income with consequent better living conditions, thus encouraging the populace to remain in the rural areas.
- * Attempts should be made to provide agricultural surpluses in order to generate growth in other sectors, such as agro-industries.

Indeed, the natural inputs are not enough for agricultural development. As Mosher (1969) observes, modern agriculture also needs the man-added influences of irrigation and the added fertility of the soil resulting from good management in the past. Other factors derive from the wider economy in which the farmer lives and works. They include fertilizers, improved seeds, pesticides, tools and implements, power, and transportation. They also include knowledge, skills, incentives, and new technology that increase the ability of the farm operator (see fig.10.1).

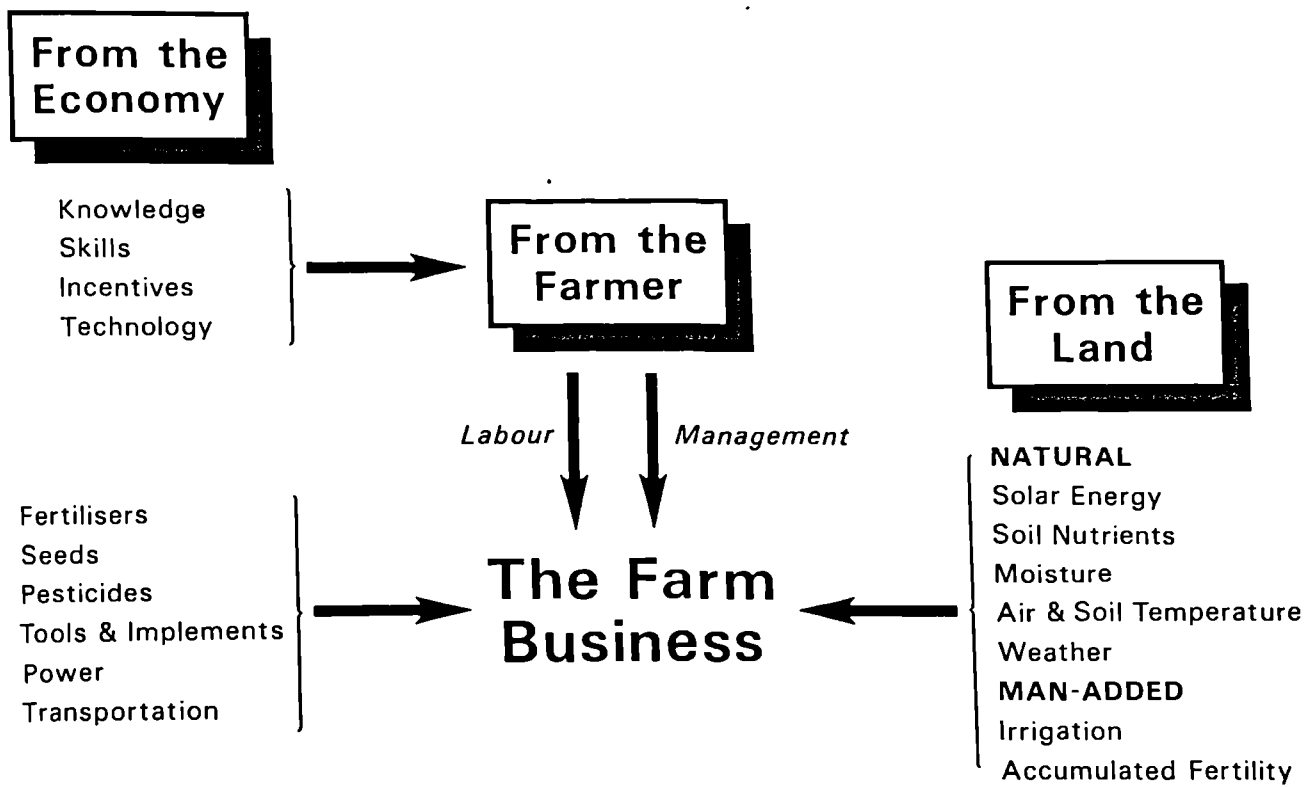


Fig.10.1 Inputs into Modern Farming

Source: Mosher, 1969

These inputs, which are necessary for agricultural development, involve basic elements to create a more effective economy. Mosher enumerates the five following elements: 1 - improved market centres; 2 - adequate roads connecting farms to the markets; 3 - local verification trials of supposedly improved farm practices; 4 - agricultural extension services, and; 5 - access to farm production credit. All these elements are highly complementary. He also adds that there is little point in improving market outlets for farm products unless there are locally proved methods of increasing production (local verification trials) and unless the farm supplies and equipment needed to increase production are locally available. Moreover, improving roads has little consequence unless there are services nearby which when connected with farms can lead to increased production. An extension service is of minimum effectiveness except in localities where all of the other four elements are present. (Mosher, 1969, p5)

Clearly, the package of agricultural development cannot be provided to the village where the population and farmers are insufficient to create an agricultural market and to supply the agricultural services, since the costs involved would be too high. It is clear that the role of small towns in rural areas can be much more convincing as strategic points in the spatial system, not only for their residents but also for their surrounding villages. In Jizan province, agricultural development is required to develop the small towns not only as rural markets but also for the distribution of agricultural extension services.

Small Towns for Rural Marketing

Small towns in rural areas, particularly those with weekly markets, would play important roles as market centres for offering services, providing commercial opportunities, stimulating economic productivity. These towns will give rural farmers access to markets for farm products, supplies, and equipment. Moreover, each farmer can find what he needs in a single market rather than by travelling from market to market to obtain his requirements. Hodder, (1968, p200-201) in his study of tropical areas, points out that:

it is undoubtedly true that a tropical farmer is unlikely to increase his production unless an increased demand is there, is seen to be there, and is easily accessible. Improved seed, fertilizers and better irrigation facilities: a tropical cultivator is unlikely to use these to increase his total production unless the market for this increased production is first seen to exist and is accessible.

Rondinelli and Ruddle (1978, p82-83) also assert the role of the market system for increasing agricultural productivity in developing countries.

To increase productivity, farmers must be able to convert increased production to cash quickly for without greater income they cannot save, invest in new technologies or acquire other input needs to expand output. And to obtain cash for their crops, farmers depend on access to relatively free competitive systems to provide fair prices for their goods.

Obviously, the problems of rural marketing significantly limit the agricultural production. Most of the problems relate to the lack of market accessibility, lack of adequate organization, the primitive nature of agricultural production, and structural problems. Rural

markets in Jizan province are very primitive and farmers do not know about handling, packaging, storing processes, and other operations that are necessary. Moreover, without developed roads commodities cannot reach the market quickly, which forces farmers to sell their produce at a loss. In addition, the difficulties of accessibility are compounded by lack of information which affects farmers' prices and limits marketing potential.

Centres for Agricultural Extension Services

Agricultural production will be increased through the development of farming practices. Unfortunately, agricultural inputs that are necessary for increasing agricultural production are not used and are indeed unavailable in rural areas, while hand tools and animal-drawn implements have remained essentially unchanged for thousands of years.

Therefore, the Agricultural Extension Service will be the principal organization acting to improve the agricultural production. It is in the small towns with their surrounding villages that they will operate to serve and teach farmers the knowledge and skills by which they may take the greatest advantage of opportunities to change the traditional agricultural methods.

Through the small towns, it would be a principle to establish the rural organization and management in order to provide an effective irrigation method, as well as to carry out agricultural research on field operation and disease control. In rural areas, the distribution of a sufficient number of veterinaries seems to be urgently needed to

provide adequate inoculation and treatment to prevent the losses which occur because of diseases and pests. The introduction of other crops with high demand in the markets is also necessary in order to raise farmers' incomes, to attract more labour, and secure jobs in farmwork.

Agricultural Extension Services which are important for agricultural production should provide facilities in small towns which are easily accessible by farmers. These include seeds, fertilizers, credit, and agricultural implements. The concentration of agricultural services in these towns will not only lead to an acceleration of the agricultural services reaching farmers, but also to reducing the large distances to major centres, particularly over difficult roads, by ensuring that farmers can go to the service centres where the facilities they need are available and that they are able to return home over a suitable distance and within a certain time.

Introducing new technological implements requires the distribution of input subsidies through soft loans. This can be achieved by making agricultural loans more accessible to farmers through establishing the new Agricultural Bank offices in rural market towns, rather than by concentrating on major urban centres. This process will enable farmers to benefit immediately from credit facilities, for they will not have to wait before travelling to ask for help.

However, to make the credit system more effective in agricultural development, it should be associated with other production necessities such as supplies, marketing projects, agricultural co-operatives, and

roads. Mosher (1969, p152) notes that:

Where effective and profitable production supplies and equipment are available nearby and where farmers have facilities for learning how to use them, production credit can accelerate the adoption of improved practices.

10.2.2 Livestock Development

Special attention should be given to livestock development as a means of providing food value and cash income. The development of small towns could play a significant role in improving the livestock sector. These contributions may be contemplated in three fields:-

1. Establishing agricultural programmes and production subsidies in small towns as an incentive for the settled semi-bedouin to grow and increase amounts of fodder to supplement the range forage. The livestock feed could be used to supplement forage resources during the dry period and also generally to fatten and improve the quality of animals used for milk and meat. The increased association with the settled farmer and a reliance upon a continuous source of feed would encourage the semi-bedouin to gradually take up settled agriculture. This would be significant if the agricultural programmes in small towns open up new land to farmers by giving them sufficient incentives.

Another factor resulting from improved livestock production would be more settled agriculture in the form of mixed farming, particularly in the plains area in which the rearing of livestock would assume an importance equal to that of growing crops. No

doubt also the introduction of mechanization to agriculture would also lead to an improvement in the quality and quantity of livestock production.

2. Extension of animal health services through the location of market towns in rural areas in order to achieve considerable improvement by research on management practices, feeding, breeding, and disease control. The improvement of animal husbandry hinges mainly on the problem of feeding, but the development of the livestock industry is dependent to a large extent on animal health control. So, health programmes should be carried out on the technical and economic aspects of fattening local sheep before marketing.
3. Improving the market system. Animals arriving at market for slaughter or sale are usually in poor condition on account of inadequate food, water, and shade, which all influence the animals' weight. This in fact leads to the increased prices for meat demanded of consumers which could simply eliminate adequate provision of food value. Moreover, slaughter-places are poorly equipped, meat is sold in the open air, and there are no cold storage or other facilities. Obviously, the development of co-operatives, improving handling, modernizing of slaughter-houses and cold storage, and other facilities are all urgently needed in rural market towns.

10.2.3 Fishery Development

Sea food is an important item in the diet of people in Jizan province. The area has a long coastline on the Red Sea, but the fishing industry is very retrograde. Fishing development seems to be necessary in order to support services for the development of rural resources. The main objectives of fisheries development are:-

- To increase the catch of fish in order to reduce the high demand on livestock meat.
- To increase fishermen's income, in order to attract young men to engage in this profession.
- To create related employment opportunities in other sectors of the region's economy, such as construction and repair of fishing vessels and equipment, ice production, fish canning, transportation, and storage.

Currently, most fish are consumed fresh in the area in which they are caught, usually on the day of catch. A small proportion of fish are kept for a short period on ice and some fish are dried for inland markets. The canning and freezing of fish has not yet been developed. Fishing activities are restricted by the shortage of new technology and equipment, but the main problem is the lack of marketing facilities such as those related to preservation and transport. The development of the private sector fishing industry requires support from the government in providing the necessary incentives to get the industry

properly established.

The development of co-operatives in market towns associated with fish development would help fishermen to improve their catch complements and to market this produce. Clearly, the co-operative organization will quickly expand the inland markets for fresh fish. It will improve the refrigerator trucks used to deliver the fish to major buyers in remote rural markets. Moreover, co-operatives will organize fish marketing and work to exploit the fishing industry in the province in order to improve this sector and to offer opportunities of employment.

10.2.4 Small Towns and Small-Scale Industrial Development

The main objectives of small-scale industrial activities in the province are:

- To exploit natural resources including agricultural products.
- To create opportunities for employment in other sectors.
- To recycle the governmental expenditure within the region and to increase the earnings of the population living in the province.
- To provide the local markets with small-scale industrial products which have a high demand.

Unfortunately, the main economic sector, i.e. the agricultural sector, which is very important as a base for developing the industrial sector, is still very retrograde. Indeed, industry also seems to be in a primitive state. The principal factors which are impeding rapid

industrial expansion are the scarcity of internally produced raw materials, the lack of capital, the lack of technical skills and knowledge, the primitive home markets, and high wage levels combined with low labour-unit productivity. It is also clear that small-scale industry in rural areas has limited access to industrial loans as small rural entrepreneurs, like small farmers, are generally excluded from the industrial credit that benefits larger industries in major towns.

The possibilities for gradual expansion of this economic sector would be rapidly improved when the indigenous raw materials are made available, and when the rural population have greater access to markets and other facilities.

The potential of rural market towns would play a significant role in this manner. Rural industrial development should incorporate encouragement of a variety of small-scale industrial enterprises which are located in rural areas. These activities would cover all goods demanded by agriculture, fisheries, building and construction, and repair and service industries. These activities are essential for rural development particularly in the beginning of development. Streeten (1979, p283) points out that:

An industrialization strategy guided by the goal of meeting the needs of the poor not only leads to a different composition of products and of techniques, but also reduces the demand that rapid urbanization makes on scarce capital, scarce skills, and scarce natural resources. By raising the level of living of the poor people in the countryside, it may reduce the pressure to leave the farms and to expand expensive urban services.

Agro-industries development is necessary in rural areas and

largely depends on the success achieved in agricultural production. When the agricultural sector is reorganized so that it is able to generate constant surpluses downstream, agro-industries could be implemented and marketing channels will also be established.

Obviously, the development of small-scale industry in rural areas requires special attention to be paid to the role of rural market towns. A range of facilities and activities need to be made available in these towns to enable the rural population to have easy access to benefits and to participate in these activities.

Therefore, the assistance of the Ministry of Industry and Electricity together with the Saudi Industrial Bank and the private sector is crucial for improving the rural industrial activities. They are responsible for the provision of industrial credit, research, training and electricity supply.

We conclude that small towns are the places where the rural population should be able to find a reasonably good level of agricultural service which would be widely usable by the agricultural population. The development of agricultural production would further encourage the improvement of industrial activities in these towns.

10.3 Small Towns and the Development of Public and Community Services

Having discussed the roles of small towns in the development of the rural economy as the first elements in the process of rural development, we may now consider the importance of a second element in

rural development, bringing in the component of public and community services.

Obviously, economic development by itself is not guaranteed to include rural development, because rural areas need both economic and social development in order to increase incomes as well as improve the living conditions of the rural population. We have seen that the majority of the rural population live in scattered villages. So, the settlement policy concerned with the function of rural small towns would consider the complementary roles of both economic and community development in the province.

10.3.1 Education Development

Education is an essential element in terms of the development process. The more education, the more rapid may be the anticipated development. The problems of education within the province have been discussed in Chapter Seven; these include the high rate of illiteracy, particularly among females, and inadequate distribution of post-primary schools.

It is obvious that during the last years, the Ministry of Boys' Education and the Presidency of Girls' Education have succeeded in opening up each year new schools staffed with the required number of teachers. However, rural areas still need more intermediate and secondary schools, particularly girls' schools. Schools located in small towns could play an important role in reducing the problem of distance to schools, and in encouraging girls to continue their studies

rather than stopping after the elementary level apparently because of the difficulty of travelling to major towns.

Unfortunately, the illiteracy rate in rural areas is higher than in urban areas, because the urban areas have been provided with adequate schools. So, for example, evening schools are concentrated in major towns where adults who cannot go to day schools have the opportunity to learn at evening schools. In rural areas, where the majority of people are illiterate, there is inadequate provision of schools and there are no programmes for dealing with the problem of illiteracy. In order to eliminate adult illiteracy and to generate opportunities for farmers and workers in rural areas to complete their education, it is essential to provide evening schools in small towns to encourage the rural population to come and study and to know that they will be able to return home certainly within a suitable distance. Moreover, implementing campaigns against illiteracy in rural areas will help farmers to discover the means of raising their production levels. The significance of educating farmers as Todaro (1985, p249) said:

Literate farmers with at least a primary education are thought to be more productive and more responsive to new agricultural technologies than illiterate farmers. Specially trained craftsmen and mechanics who can read and write are assumed to be better able to keep up to date with changing products and materials.

Another problem of the education system, not only in Jizan province but also in most developing countries, is that it is not related to the real needs of the population. It tends to overemphasize literacy and numeracy.

Clearly, overemphasis on literacy education while neglecting the real needs of rural areas has encouraged people to migrate to urban areas for better incomes. Thus, it is necessary to consider what kind of education is needed to be most effective for rural development. Coombs groups four categories of education:-

- 1 - General or basic education, aiming at literacy, numeracy and elementary understanding of science and one's environment, which primary and general secondary schools now seek to achieve.
- 2 - Family improvement education, designed primarily to impart knowledge, skills and attitudes useful in improving the quality of family life, on such subjects as health and nutrition, home-making and childcare, home repairs and improvements, family planning, and so on.
- 3 - Community improvement education, designed to strengthen local and national institutions in such matters as local and national government, co-operatives, community projects, and the like.
- 4 - Occupational education, designed to develop particular knowledge and skills associated with various economic activities and useful in making a living. (P. Coombs, quoted in Todaro, 1985, p272)

Very clearly, to distribute the requisite education facilities to hundreds of villages, the cost would be very high. So, the small towns are the convenient locations for the organization of these facilities.

10.3.2 Health Service Development

Health is an important element of basic needs in the rural areas. The role of health services is closely related to the quality of human resources. Improved quality of health services can be reflected in terms of improved productivity and higher standards of living. By contrast, shortage of health services entails multiple deprivations, including low levels of rural welfare, productivity, and conditions of living.

Despite the rapid improvements made in the health sector during the last few years, the province in general and rural areas in particular are still in great need (see Chapter Seven). Briefly, the rural population have poor access to health facilities which are concentrated in the major towns. The problems the rural population have in obtaining access to health facilities can be seen in the three following causes:-

- The difficulty of transport apparent in the lack of paved roads and public transport.
- Shortage of medical services.
- Concentration of better facilities in major urban centres.

Our survey gives a clear prospect of the roles of small towns in the distribution of adequate health services in rural areas. These roles may be viewed in three significant areas:

* Small towns can provide greater accessibility to the health services. In rural areas the problem of accessibility is aggravated by the dispersion of a high proportion of the population in small scattered settlements with limited resources. The majority of these rural settlements are not connected by paved roads, a situation which has created rural deprivation in comparison with rich urban provision. This means that people in remote rural areas are not provided with fast and easy access to hospital facilities. The consequence is that emergency cases cannot reach hospitals in a reasonable time. This is true in particular for the south-west, hilly, and mountainous areas as well as for the northern part of the province. In order to reduce the wide disparities between the urban areas and the rural areas, more attention should be given to the policy for small towns. This policy will lead to a minimizing of the problem of long distances, it will create a suitable relationship between community and staff in the formal health system, and it will make a major contribution to the health care of the majority of the rural population.

* The small towns policy will lead to an upgrading of the health system in rural areas. We have seen in Chapter Seven that the provision of health facilities in rural areas lacks technical support, medical supplies, etc. Most of the health centres in rural areas belong to grades one or two, which are the lowest levels of health service provision.

To achieve good health services in rural areas, it is important

to take up small towns as suitable locations for the improving of health facilities. These towns, together with their surrounding settlements, have sufficient populations to provide adequate services such as small hospitals and fourth and third grade health centres.

- * An effective role for small towns can also be contemplated in terms of generally improving the health standards of the community.

Rural areas are places of endemic diseases, such as malaria, tuberculosis, and bilharzia, while most deaths in rural areas are among children and are caused by malnutrition, respiratory diseases, diarrhoea and dehydration, and measles. The following facilities should be concentrated in small towns to provide adequate health services.

- Qualified medical staff.
- Mother and child care units.
- Mobile health centres, with mother and child care units, to serve scattered inhabitants in the remote settlements.
- Immunization programmes providing regular vaccination to schools and rural communities.
- Hygiene programmes to eradicate the rural diseases. Clearly, provision of good potable water and social education are much more important in rural areas than is concentration on medical treatment.

We can therefore conclude that health improvement requires action in a number of different programmes provided by different government departments in the small towns.

10.3.3 Transport and Road Development

The problems of road transport in Jizan province have also been discussed in detail in Chapter Seven. Briefly, these problems appear in the difficulty of accessibility reflected in the inability of most of the rural residents to gain convenient access to services and facilities related to economic production. Thus transport planning in rural areas is currently ineffective.

There is no doubt that a better transport system could contribute significantly to the development and urbanization process. This point has been discussed by many scholars. For example, Hodder (1968, p191) notes that "... the principle is now generally accepted that the improvement of transport forms perhaps the most valuable single contribution towards economic, social and political development" White and Gleave (1971, p228) also assert that "it is a truism to stress the importance of communications and transport as factors in social and economic development, for the level of development is obviously controlled by the level of investment in these sectors of the infrastructure."

Johnson (1976, p241) explains the importance of roads in terms of the development of social and economic sectors:

A road system can become a unifying instrumentality that consolidates productive power of an area and releases a latent social dynamism. The universal handicaps of all underdeveloped areas are low agricultural yields, low productivity per worker, and waste of manpower stemming from underemployment. A properly planned road system must try to ameliorate all three of these endemic shortcomings.

Clearly, transport and roads hold a key to development so that these must be developed before any other activity can be successfully implemented. Hodder (1968, p191-192) gives three reasons to explain this point. First the development of transport and roads plays a vital role in the extension of settlement in a region. Second, extended transport facilities are necessary to the widening and fusion of the market in areas already settled and in stimulating further production for internal or external trade in a country and so in encouraging the growth of a modern exchange economy. He further cites Kindleberger (1966) who observed that cheapening of transport fuses markets, bringing additional buyers and sellers into contact with one another, increasing elasticities of demand and supply. Finally, Hodder observes that improved transport facilities may make possible the intensification of agricultural production, with all the improvements in techniques this implies.

These observations can be tested in Jizan province when we compare the urban areas and their better system of roads with the remote rural areas where the network of roads is still backward. In the urban areas, farmers have greater access to markets, agricultural inputs, and other social and economic services. Consequently, farmers have shifted from the traditional sorghum crops to cash crops which have a high demand in urban markets. This change has had a real impact

on increasing personal incomes and on the general standard of living. By contrast, farmers in remote rural areas without a road network show low levels of income and low standards of living. Moreover, urban centres with good transport systems in addition to their weekly market centres have developed their daily market activities and have attracted purchasing power centred on industrially produced commodities. Another factor recognizable in the urban areas is the influence of the road system on satellite settlements and villages which they serve, enabling these localities to retain their inhabitants since they are able to travel daily to nearby towns for work.

Unfortunately, however, the road network has not yet benefited the masses living in rural areas, who remain relatively isolated from the dynamic urban areas, particularly during the rainy seasons. This situation requires improvement of rural mobility by provision of a better road system. To achieve greater accessibility to facilities by inhabitants of rural areas, the network of small towns would provide a framework for investment in infrastructure development. These towns, provided with good transport facilities, will not only link the small rural settlements with markets, but will also integrate the rural areas with urban areas. The principal objectives of this network of small towns linked by new road development may be summarized as follows:

- * They will provide new agricultural inputs and technology.
- * They make markets more accessible to the rural population, so that farmers may receive better prices for their products.

- * They will improve mobility by connecting isolated areas with more dynamic areas.

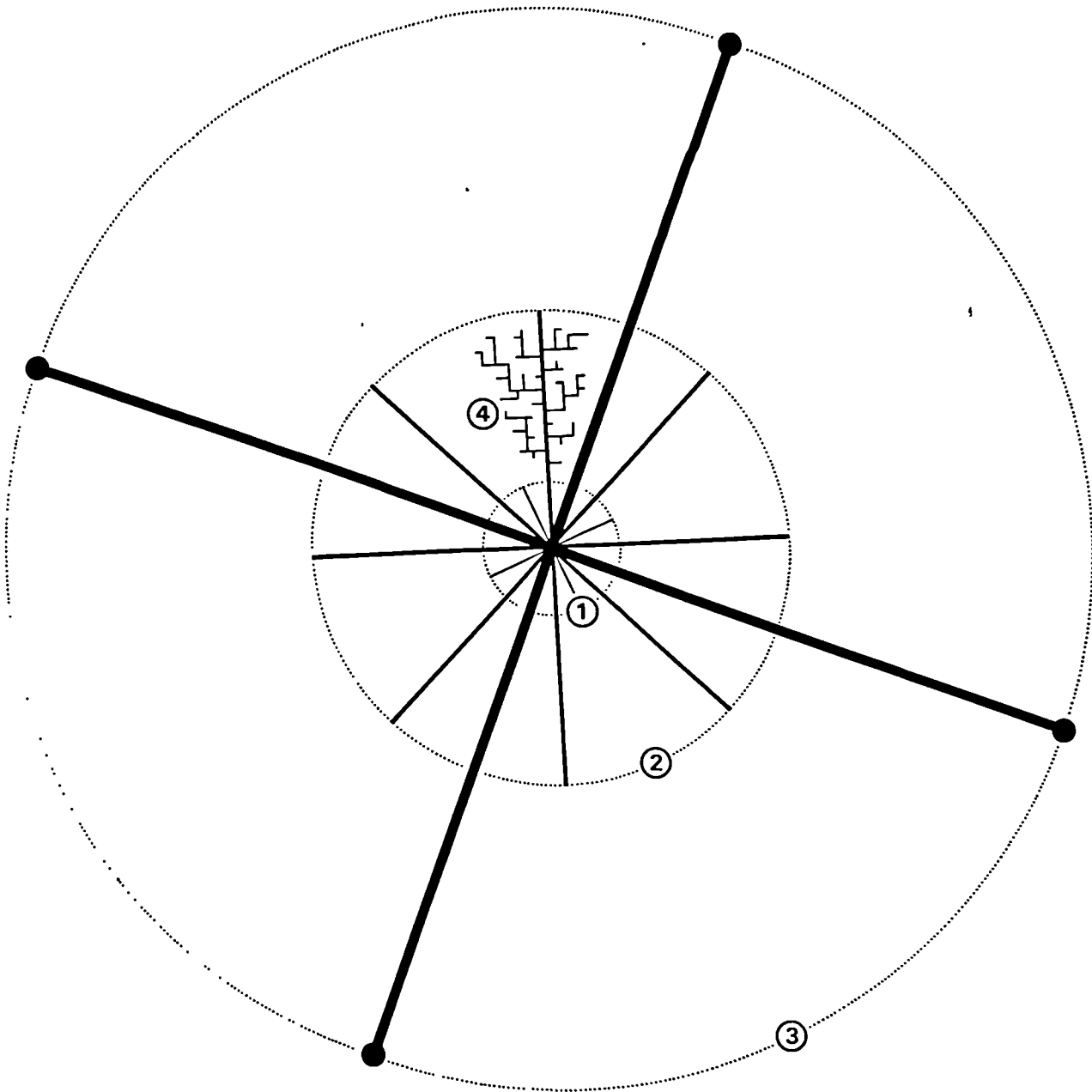
- * They will increase agro-industrial activity in rural areas.

- * They will improve the living conditions of the rural population by granting them readier access to education, health, and other services.

Dusseldorp (1971, p29) wrote that:

one of the most important aims of a centres plan is to improve living conditions in agricultural areas by improving the quality and quantity of services through concentration. Such concentration, however, will only be effective if the people can reach them easily. It should be possible to get to the centres quickly and without much discomfort from any point in the service areas. This means that the site of the centre and the road network must be adapted to one another.

For rural transport development planning, three types of road are required to converge on the market towns (see fig.10.2). First, it is necessary to develop the roads that link the town with surrounding villages. These roads are used for daily round trips made by people travelling from the villages to work, services, and schools, as well as for bringing agricultural produce to market centres.



- ① *Maximum isochrone for commuters*
- ② *Maximum isovecture for agricultural produce movements*
- ③ *Proximate limits for in-bound & out-bound truck traffic*
- ④ *Feeder roads — sample well-serviced area*

Fig.10.2 Rural Growth Centre and Network Roads

Source: E Johnson, 1976

Johnson (1976, p236) called these roads "commuting routes" and he explained that:

If the rural growth centre is going to become a production, processing and service centre, and if it hopes by the establishment of even a modest range of diversified enterprises, to increase the total area employment, then very careful attention should be given to developing a truly functional constellation of commuting routes. If feasible, they should radiate in all directions from the centre, making it possible for village-dwelling workers to travel swiftly, easily and directly to their places of employment.

Second, it is necessary to develop the roads that link the market towns with major urban centres and other markets in the rural areas. These roads would play a significant role not only in linking the rural areas with major and urban centres in the province, but also in connecting the rural areas with neighbouring regions through the major roads. Moreover, these roads work as channels for import-export into and from rural areas. Johnson (1976, p239), referring to the "truck roads" notes that:

These roads will need to be progressively improved as traffic increases, permitting the movement of heavier loads at greater speeds and thereby minimizing the transport cost of outgoing and incoming merchandise. The thrust of these transport facilities must be inward as well as outwards.

The third type of road requiring development is the feeder road. These roads have a positive development effect on both economic and social conditions. Unfortunately, these roads are generally neglected in rural development programmes. Funnell (1976, p98) argues that:

One of the controversial questions concerning rural

transport is the likely benefit arising from improved feeder roads. There have been many studies examining the feasibility of trunk road developments but for less attention has been directed to feeder roads. It is these roads which are of importance for the interconnection of local centres.

In fact, the growth of traffic and rural economic development are significantly dependent on the development of feeder roads. In areas where agricultural methods are still traditional as in Jizan province, feeder roads are the key for developing this sector. They will change the agricultural production from one traditional crop (sorghum) to vegetables and other cash crops. Dickenson et al. (1983, p215) emphasize that:

The introduction of new cash crops has often been associated with the development of an adequate network of feeder roads to give farmers access to collecting or processing centres.

Feeder road networks will indeed sustain the agricultural growth and improve the welfare of farmers by creating accessibility to markets, credit, seeds, fertilizers, advice, and other agricultural technologies and facilities.

Moreover, the development of feeder roads would also speed the provision of services and facilities that are needed in rural areas. In addition, they will also speed the transformation of rural societies from traditional to modern life, through improving rural mobility and the diffusion of modern information.

Therefore, in the area studied, feeder roads should be given top

priority in order to achieve the above objectives. Obviously, one of the most striking problems in rural areas is that during the rainy and irrigation seasons, large areas can easily become isolated, leading to difficulties with mobility and increasing transport costs. In fact, feeder roads are most efficiently constructed by municipality and village cluster departments. So, small towns should be provided with these departments so that they may develop branch roads from the regional and secondary roads in order to connect the villages in remote rural areas with markets (see fig.10.3).

We may therefore conclude that development of the road transport system in rural areas will have a positive effect either directly or indirectly on the development of the economic and social conditions of the rural population.

10.3.4 The Development of Housing and Community Services

Improved farming production is closely associated with more comfortable living conditions. Better housing with good utilities seems to be needed in rural areas, because the success of the rural economy in Jizan province will be associated with the success in rural community services. Recently, the rural settlements have shown certain specific problems, related to the wide differences of the province from the rest of the country, in terms of its physical characteristics, cultural heritage, relative isolation, and backwardness of the local economy. The problems of housing and community services have been taken up in detail in Chapter Eight.

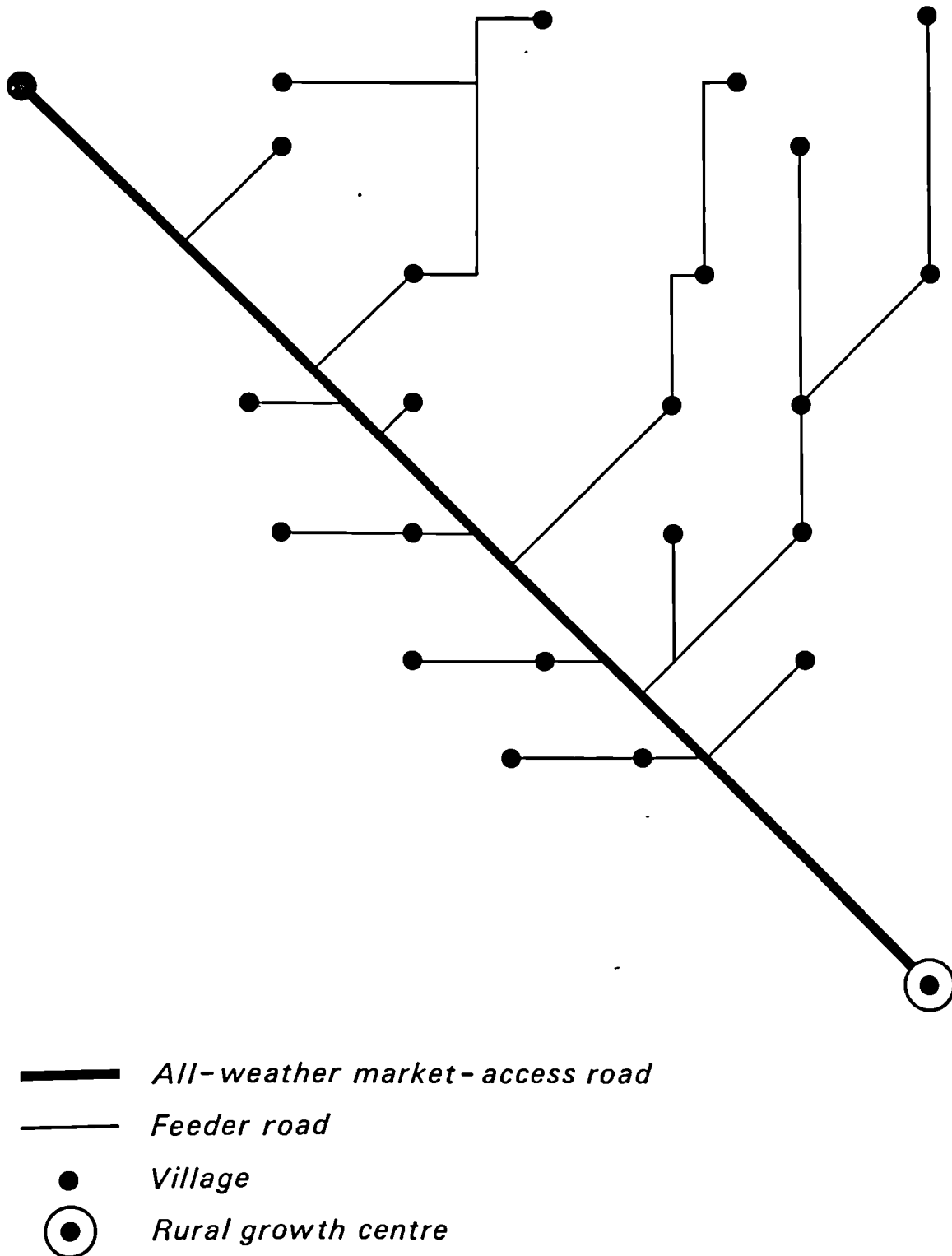


Fig.10.3 System of Feeder Roads

Source: E Johnson, 1976

Clearly, the quality of housing of the rural population reflects the traditional economy in which the housing originated. When we compare the rural housing with urban housing, we see that the first are older, in poorer condition, and inhabited by people on low incomes, whereas in the urban areas where the people have greater access to housing loans and other services, the quality of housing is much better. The improvement of rural housing therefore seems to be urgently needed not only to gain higher economic production, but also to provide more attractive and comfortable accommodation for the rural population in order to reduce their migration to the cities. The provision of social and economic services in small towns is crucial in the campaign to improve rural conditions. The roles of these towns, either directly or indirectly, in terms of housing and community services may be summarized in the following factors:-

- * The development of the rural economy will lead to an increase in rural population incomes and an increase raise in their standard of living in real terms.
- * The provision of public and physical infrastructure will rapidly transform the rural culture.
- * Providing small towns with branches of Housing Development Funds will enable the rural population to obtain readier access to the benefits of this service.
- * Rural conditions require housing and an environmental planning system. It is obvious that rural areas have received little

attention towards the development of sanitation, drinking-water supplies, and village street planning.

Providing small towns with municipalities and village cluster centres is urgently needed in order to improve the rural environment by such means as providing public health services, refuse collection, maintenance, road construction, public gardens, and building permits.

- * Small towns will be able to offer basic facilities required by the rural population, such as post offices, public telephones, social welfare offices, fire stations, public libraries, sports facilities, and gas stations.

10.4 Other Proposed Functions of the Small Towns

Most of the small towns, with their historical functions as weekly market places in rural areas show common functions in terms of social and economic activity. However, because the development strategies have ignored the potential roles of these towns, their function in the development strategy seems to have been limited. In fact, small towns could perform more than their traditional functions. They can potentially contribute to redressing the balance in the pattern of urbanization, being able to offer a wide variety of social functions to the province. However, we have to understand that the potential of the towns left to themselves will remain unrealized. Clearly, economically and socially productive activities must be located in these towns. There should be a development project pursued

within them by both government offices and the private sector with the participation of the rural population. All such efforts will effectively raise the potential of towns as a necessary part of the framework for planning and formulation of development strategy. Thus, special attention given to small towns, in addition to the previously noted functions, will enable them to perform the following functions.

10.4.1 Centres for Social Transformation

Small towns are the focal points for many social linkages, both between these centres and their hinterlands and between urban and rural populations. They may create a mix of urban and rural activities, by attracting buyers and sellers from both urban and rural areas to gather in economic and social exchange. Thus they may become places of political and administrative relevance, as well as being places for meeting friends. Consequently, they can play a crucial role in terms of fostering changes in attitude and behaviour and thus in aiding transition from the traditional rural ways to urban life.

It is obvious that with market expansion and increasing commercialization of agricultural and other activities, small towns will become the permanent centres of exchange and social services promoting increasing social transformation and spatial integration. In addition, these towns will also play an important role in social fusion by creating an environment in which diverse social, ethnic, and tribal groups may be assimilated in rural areas. This can be achieved through:

...posting of urban workers in villages. Such workers would include extension workers, teachers, paramedical staff and through people living in rural areas and commuting to urban jobs and also through the provision and employment opportunities which might draw the urban trained rural youth back to key villages. (Hwakar, 1985, p312)

Small towns can also play an important role in terms of social transformation, particularly in the settling down of semi-bedouin people in the rural areas. Development programmes in the agricultural sector providing incentives for farmers to increase the amount of their yields would encourage semi-bedouin people to gradually take up settled agriculture.

10.4.2 Centres for Attracting Rural Migration

In Jizan province, the imbalance between urban and rural areas has created an environment in which ambitious rural people move to the major towns to seek better jobs and social life. This is in fact the problem of most developing countries. Todaro (1984, p100) notes that:

With the preponderance of people still based in rural areas, many developing countries face a double dilemma: rapid urbanization is fueled by a high rural population growth rate, and this in turn is an indirect response to urban biased development. Strategies that serve to impoverish rural families.

Obviously, the development process should give attention to the role of small towns. The development of these towns would give the rural population what they need in rural areas without their having to migrate to urban centres. The roles of small towns in Jizan province in terms of reducing rural migration can be contemplated in two areas:

- * First, the development of the agricultural sector, which would lead to a new work opportunity not only in the agricultural sector itself, but also in the other sectors of the economy that depend on agricultural production, such as small-scale industrial activity.

- * Second, providing small towns with physical and community services, which are necessary for improving the quality of life, because agricultural development alone is not adequate for rural development. The provision of various elements of development, such as electrification, water supply, education, health services and improved rural housing, would bring the urban standard of living to the rural areas. Clearly, with a good relationship between economic and community development, small towns would stem the continuing exodus of migrants to major urban centres.

10.4.3 Centres for Extension of the Urban System

One of the major shortcomings of the existing urban centres in the province is their failure to promote linkage in terms of the development concept. Consequently, the rate of urbanization in the province is still very slow and visible only in a small number of towns.

These few towns have created a dis-equilibrium between urban and rural areas rather than development. Since the level of urbanization in the province is inadequate and has no generative influence on rural areas, a policy based on the development of small towns as small agro-

urban centres would be more appropriate, providing innovative cultural, economic, social, employment, trade, and service functions. When the small towns are stimulated to social and economic productivity, the urbanization level and the central places sub-systems will be expanded. Commercial activities will expand and manufacturing with local materials will be developed.

Moreover, these trading centres will replace most of the weekly market meetings. When this occurs, the system of weekly markets will change to one of daily markets and this is the process of urbanization. This change from the periodic market system was also addressed by Hodder (1968) when he mentioned two stages in the shift from periodic to continuous trading and the shift to specialized wholesale markets (see fig.10.4).

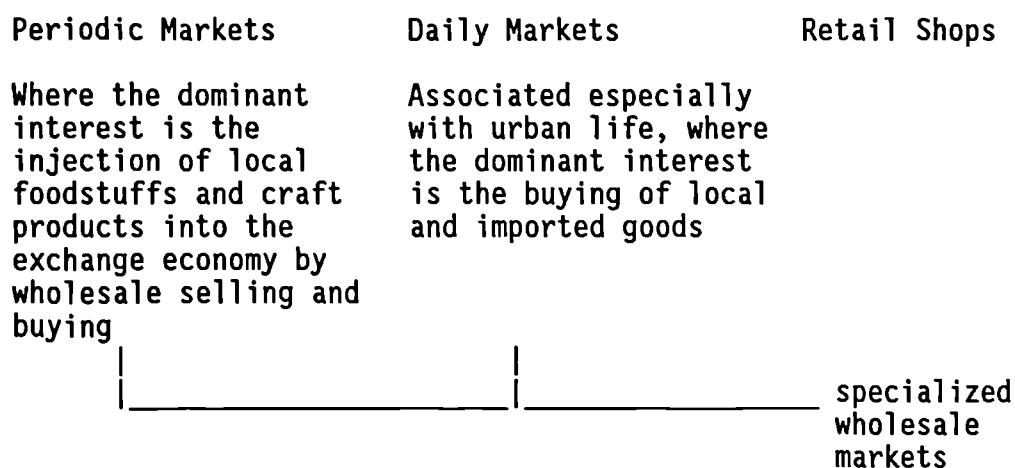


Figure 10.4 Hypothesis of change from periodic market to daily and specialized wholesale market.

Source: Hodder, Economic Development in the Tropics (1968), p204

This hypothesis of transition from simple periodic markets though the daily and wholesale markets in larger towns seems to fit the market

system in Jizan province. The evidence shows that in the urban areas, where the physical, economic, and social services are located, the system of markets has changed to urban daily markets with more specialized wholesale trading in Jizan town, which is the largest town in the province. In the other towns, such as Sabya, Abu Arish, Sametah and Baish, in addition to the weekly market cycle, the daily market system has been extended. By contrast, in remote rural areas, the cycle of weekly markets still prevails.

The development of the market system from periodic to daily and urban markets is characteristic of many places either in developed or underdeveloped countries. Furthermore, many a European town had its origins in a market and the same thing is occurring in the developing countries. Such markets are appearing at an increasing rate with population growth and the expansion of production needs and incomes. (Garnier and Delobez, 1979, p167)

It may be concluded that the development of market towns will lead to an extension of urbanization and this will create the spatial hierarchical organization of central places which will speed the development process.

10.4.4 Centres for Diffusion of Innovation

Diffusion of innovation is essential for rural development. Berry (1972, p108) explains the process of innovation as the filtering down through the urban hierarchy and the spread of benefit transmitted from the core to hinterland regions, and from larger urban settlements

to smaller settlements. "As a consequence, the lowest levels of welfare are found in areas peripheral to small urban centres in outlying hinterland regions."

Jizan province has only a small number of urban centres concentrated in the middle part of the plains area. The impact of these towns is not sufficient to stimulate widespread economic and social productivity or to introduce the benefits of urbanization to remote rural areas, because the settlement hierarchy is not integrated and the spread effect tends to weaken rather than strengthen with distance. Indeed, the role of small towns with easy connections to rural villages and major urban towns seems to be important to ensure that the diffusion of innovation goes down smoothly and to link the urban areas with rural areas.

In fact, providing small towns with economic and social services and facilities will strengthen the relationship between them as services centres for the supply of services and goods, and rural areas where the demand for services and facilities is high. Indeed, through this relationship, critical changes would occur. Principal among these are, first, the adoption and diffusion of new agricultural technologies which are necessary for increasing farmers' production. Second would be the rapid social change in the attitudes and behaviour which indeed permits a more rapid transition from traditional rural life to more modern living. Taylor (1978, p21) asserted the positive role of small towns as centres of innovation diffusion when he wrote "If innovation filters down through a hierarchy then it would seem logical to reduce time and distance decay effects by introducing them at the lowest level

of urban centres rather than allowing them to filter down." Adalemo (1979, p128) also explains the role of rural market centres as follows:

They perform integrative functions by providing the link between the production and consumption centres of the economies within which they are located. This link does not stop with the mere transfer of goods. It includes the transmission of vital developmental information as these market centres act as centres of the diffusion of information to the surrounding areas.

We may therefore conclude that the system of rural towns alone does not seem to be sufficient to achieve the distribution of innovation unless these towns be provided with the requisite factors enabling them to distribute the development benefits to their surrounding areas.

10.5 Conclusions

Rural development policy must be focussed on economic and community development. However, it is important to understand how the two principal elements can be improved, and how to provide a more equitable spread of facilities granting the rural population greater access to the benefits of the development process. The evidence shows that the spread effects from major towns have not benefited the remote rural areas.

A good distribution system of rural small towns seems to be essential to ensure that the benefits of development spread to the majority of the rural population living in scattered villages. The development of these towns would provide wide economic and social functions that are important for rural development. The system of

small towns would also link the rural settlements with urban centres and create a settlement hierarchy which is very important as a guide at the local level in order to quicken the development process. The degree to which these towns can play a vital part in rural development depends on the degree of distribution to these towns of government agencies and of other economic sectors as a means of strengthening their potential. The classification of small towns according to their development potential factors and proposed settlements hierarchy is the subject matter of the next chapter.

Chapter 11

Classification of Small Towns for Growth Activities and Proposed Settlement Hierarchy in Jizan Province

11.1 Introduction

The weakness of the existing urban centres is not characteristic throughout all levels of settlements in the province. The high degree of polarization between a few urban centres and the rest of the province has created a wide gap between urban and rural areas. Consequently, the mass of the rural population has no access to the services and facilities that are concentrated in large urban centres.

Indeed, to overcome these problems, a reconsideration of spatial organization to include the roles of small towns in rural areas is needed in order to link the urban with rural areas, and to enhance economic growth and social integration throughout the province.

The policy of small towns has been suggested as a means of building on the existing urban levels. This policy will lead to a complementing of the settlements hierarchy and so foster rural development.

Therefore, the factors concerned with the role of small towns as a vital approach for rural development, which have been discussed in Chapter Ten, are taken as important criteria. The factor analysis method is used to represent the potential of small towns.

11.2 Criteria Used to Assess the Potential of Small Towns for Development

In proposing small towns as vital components for rural development planning in Jizan province, we are not suggesting that all the towns have to be provided with all the development projects because not all the rural centres have the same potential for providing all the services. Johnson (1976, p219) points out that:

... the selection of growth points is not something that can be dealt with on a wide patronage basis. However heartless a well-grounded decision to favour less backward areas may appear to be to those who are distressed by the sight of poverty, there are rigorous criteria that must be applied if the waste of resources is to be avoided. For if growth points are to have accumulative, transforming effect, they will have to be places where successive tranches of investment can prudently be made.

Therefore, the essential factors concerning the role of small towns for rural development which have been discussed in the previous chapter need to be considered in the classification of small towns. These factors should take into account:-

- 1 - centres with wealthy hinterland, that is a quality of land suitable for agricultural development;
- 2 - centres with significant numbers of hinterland population, that is the people served by the centre;
- 3 - centres with good accessibility, that is the provision of roads;
- 4 - the relation of centres to urban centres, that is the distance

form the nearest urban centres;

- 5 - provision of services and facilities, that is the central place function.

These criteria would determine the towns with significant potential for concentrating in them the services and facilities which would secure the highest returns from the available resources, favourable human factors, and encouragement from government support. The data used in this study have been collected from different resources: a socio-economic survey of villages and hijar in Jizan province made in 1983, the province of Jizan road map (1989), the topographical map sheets (1:50000), investigation and detailed studies of the agricultural development of South Tihamah (1978), and questionnaires and investigation undertaken in 1988 and 1989. The following analysis will set out further details about the criteria and variables used in this study.

11.2.1 Criteria Based on Quality of Land for Agricultural Development

Rural development is not possible without appropriate development in agricultural production. Jizan province is characterized by its potential land for agricultural development. Moreover, agriculture is the predominant economic sector in the province for the majority of the population. Nevertheless, this sector is still traditional in character, producing only low levels of income.

Therefore, improving this sector seems to be justified in order to

increase farmers' incomes and agricultural production, as well as to create new opportunities of work in rural areas, and to provide raw materials for marketing and industrial activities. Indeed, the development of small towns is crucial for improving this sector by providing the necessary and supporting services which encourage high agricultural yield.

Obviously, Jizan province is divided into three main physico-graphical areas: plains, hilly, and mountain areas. Each unit of these areas has its own characteristics in terms of farm types, crops, topography, and suitable agricultural land.

1 - Types of Farm:

There are three main types of agriculture practised in Jizan province. Farming in the first area depends entirely on the frequency and duration of flood waters which are diverted from wadis. These areas are the best lands for cultivation in the province. The second type of farm is related to the hilly and mountain areas, where the rainfall is the main source of water for practising agriculture on the terraces. The annual mean of rainfall here is between 300 and 500 mm. The third type of farm belongs to the dry coastal areas where the annual rainfall is less than 200 mm.

If we compare the areas of the province with respect to these types of farm, the areas which depend on flood irrigation are considered as the best land for further development. The value of this variable is given a weighting of 3 for this land, 2 for the second

type, and 1 for the dry farms.

2 - Topography:

Topography is considered to be an important factor in terms of determining human activities. Obviously, agglomerated rural settlements are usually associated with uniformity of relief, and fertility of soil. In the case of Jizan province, the plains area has been characterized by fertility of land with a rapidly growing population, which indeed has led to intensive cultivation and settlement concentration. In the hilly areas with relatively rugged lands and limited agricultural resources, the fragmentation of settlements is very common. Moreover, in the high mountain areas where the environment is very harsh, the land is too poor to support compact settlements and this has led to characteristic individual and isolated farms and houses.

Therefore, the plains area from the seashore to 100 m above sea level, with gentle slopes between 1 and 5 per cent, is identified as the most important area of agricultural production and population density. This area is weighted with a score of 3, whereas the hilly areas between 100 and 900 m above sea level scored 2, and the high mountain areas above 900 m scored 1.

3 - Suitable Land:

Suitable land for agriculture is associated with topographical factors. Attention should be drawn to the very large areas which have

high quality land for agricultural development. These lands would be maximized by improving traditional techniques and introducing new areas. The development of small towns will satisfy two needs, viz: rehabilitation and modernization of the traditional agricultural system, and the opening up of new areas with potential resources. The percentage of suitable land for agriculture in each emirate is considered as a potential variable for agricultural development.

4 - Crop Options:

Crops contribute both to the nutrition and the income of the rural population. In fact, areas with high potential in water resources and fertility of soil have good potential for producing a variety of crops, while dry areas have only one or two traditional crops such as sorghum and millet.

According to the farm management of Wadi Jizan project, there are 15 more profitable crops which can be grown in the province. However, the availability and prosperity of the existing farms require much more thorough extension work. The role of small towns would lead to modernization of the agriculture practised and an introduction of new crops particularly those for which there is high demand in the local market. Main crops in each emirate are considered as a potential variable in this study for the selection of small towns.

11.2.2 Criteria Based on Hinterland Populations and Settlements

The population is the target of development. However, the

population is not equally distributed. In Jizan province, the rural population have organized their habitat according to the potential of the natural environment and traditional socio-economic system. Obviously, the habitats of the plains, hilly, and mountain areas would reflect the impact of physical and social factors on the population's organization. The potential variables considered here are:

1 - Rural Population Density

The hinterland population is determined by the rural population density. Actually, the provision of a package of services and facilities to small towns requires available population figures to support their growth and achievement of development objectives. Van Dusseldorf (1971, p12) wrote that:

It is becoming more and more obvious that services catering for rural populations can only operate at their optimum when they provide for a certain minimum number of persons. This minimum number of persons 'threshold' has a tendency to increase.

In Jizan province, population is growing at an estimated 1.8 per cent per annum, and small towns are growing at an estimated 5 per cent per annum. Thus, provision of an adequate package of services to small towns will not be in danger for the future. In this study, the density figure of each emirate is recorded as a potential variable. On this basis, it will be possible to give an idea of the provision of services and facilities within the sub-emirate centres with respect to the population that would be served by each centre.

2 - Population of Towns:

The rural settlements are small and scattered over the environment of the province. Obviously, every group of villages is distributed around a major centre which acts as a central place for provision of services. These centres have a greater population than the surrounding villages. Moreover, certain economic and social services are generally concentrated in these towns. So, centres considered to have high potential are those with large populations. Johnson (1976, p191) asserted the same when he wrote:

The condition of the rural population requires development of the agricultural sector, as well as their general standard of living. To achieve these objectives, the rural areas require a package programme of services. These packages cannot be provided in the scattered small villages because the average population is insufficient to warrant a continuous market for agricultural produce, a profitable outlet for farm supplies, a centre for farm practice verification, a cadre of extension works, or generally impersonal facilities.

In Jizan province, the larger rural towns usually have important functions as traditional working markets, and these markets have attracted other administrative functions to be located nearby. Therefore, towns with greater populations, have greater functions and this would provide both social and economic justification for the selection of larger centres for investment. Thus, the size of towns has been taken as a potential variable for the classification of small towns, in order to break down the urban system which is concerned with a small number of urban centres with more than 5,000 inhabitants, while the small towns with less than this figure and with which the rural population has contact are relatively developed.

3 - Number of Villages:

The objective of bringing services to rural populations is indeed more than justified. Jizan province includes about 927 villages, most of which are too small to provide services. Moreover, most of the population who live in these villages do not have easy access to urban centres. They suffer from the absence of municipalities and basic services. Indeed, the development of small towns which are distributed in rural areas would benefit the small rural settlements. Therefore, the number of villages in each emirate is considered as a variable for the classification of small towns in order to guarantee that the development programmes benefit the majority of the rural population.

11.2.3 Criteria Based on Road Accessibility

Accessibility by residents of the habitations is considered an important factor in evaluating the quality of a centre's location. Physical accessibility is crucial in the selection of small towns. It refers to distance to be travelled in order to obtain goods and services.

Clearly, centres with good accessibility usually have opportunities for interaction with dynamic urban areas, which indeed lead to an acceleration of rural development. Hoyle (1973, p9) points out that:

The interaction between the level and pattern of transport resources and the average level of living of the population of an area is a critical factor affecting economic and social progress, and must be taken into account at all

stages of national and regional development planning.

Undoubtedly, the topographical condition of an area plays a major part in influencing road development affecting the movement of people and goods. With regard to Jizan province, accessibility of small towns has been identified by the existence of different grades of roads. This means that the provision of regional asphalted roads provides an excellent opportunity for mobility and interaction and for minimizing travelling time, not only between the larger urban centres, but also between the province and the rest of the country. By contrast, the earth and rocky roads adversely affect the convenience and travelling times to markets and urban centres, and this in turn reduces social interaction and innovation distribution.

Thus, the major asphalted roads are given a high score of 4. The secondary asphalted roads are considered as having a better basis for further development and the value of these roads is given a weighting score of 3. The earth roads are more beneficial than rocky roads and the value of these roads is given a weighting score of 2. The rocky roads with harsh environmental conditions have the lowest weighting score of 1.

11.2.4 Criteria Based on Locations in Relation to Urban Centres

Urban centres in Jizan province are few in number and are concentrated in the middle part of the plains area. This concentration has created a wide polarization of economic and social activities between urban centres and the rest of the province. Larger rural areas

are not accessible to the provincial urban centres. Consequently, the diffusion concept of modernization can be influenced by long distances, particularly in areas with low levels of road development.

The objective of small towns is to increase the degree of accessibility in rural areas in order to make the rural population not have to travel long distances to services they need. Moreover, good accessibility will increase the diffusion of innovations which are essential for rural transformation. So, the distance between a centre and the nearby urban centre is assigned as a variable for the selection of small towns.

11.2.5 Criteria Based on Central Place Functions:

The policy of small towns based on their variable functions as central places should be taken up. Indeed, understanding the functions of these towns would offer useful guidelines in the selection of town which have a potential to serve their hinterland. The existing linkage between the centres and their surrounding settlements should be built on in order to provide the missing services and also to promote the role of the towns that have a significant function in rural areas. Johnson (1976, p223) explained this when he wrote:

The planning task is to devise ways and means for improving the facilities that already exist, adding new capital installations, providing minimal necessary public services, and establishing such educational, health and other institutes as will be necessary to make the centre a place that will attract buyers and sellers from a widening hinterland, and thereby hasten the process of a real technical and economic improvement and modernization.

Concerning small towns as central places, there are four functions considered as important variables in the evaluation of small towns.

1 - Market System:

The most important phenomenon in inter-provincial relations is the existence of the periodic weekly market (sug). The selection of small towns as suitable locations for providing economic and social services should be concerned in light of the historical perspectives of these traditional markets which the rural population have identified as accessible centres. Thus, the strengthening of these traditional markets where the rural population make regular visits, must be considered a prerequisite for development. Taylor (1974, p157) suggested that:

If small urban places are to be used as injection points for innovation and change then they must be not only accessible but also attractive to the people in their hinterland. A centre that is not visited frequently by the people is unlikely to have much impact on development.

Since the weekly markets came to play a crucial role in the promoting and developing of rural areas, towns with periodic and daily markets are given a high score of 4. Towns with small periodic markets and morning daily markets are given a score of 3. The towns with only small morning markets are given a weighting score of 2 and the towns with only shops are given a weighting score of 1.

2 - Availability of Government Services:

The existence of government services, variably distributed, must be considered as important for the selection of small towns. There are certain services more widely distributed in rural centres than others. These services attract the rural population to visit the rural centres. A study carried out in the province indicates that secondary schools, courts, police, health centres, and post offices are the most available services in these towns. By contrast, the services needed for agricultural development, such as suppliers of seeds, fertilizers, and other agricultural inputs, are not available in these towns so that people have to travel to larger urban centres to purchase them.

The selection of small towns based on social services would emphasize the role of these towns as central places in rural areas. The existence of social services would give attention to the services that are not available in rural areas which are conducive to rural development. Moreover, concentration of social services with other activities in particular places would enable the rural population to use more than one service in the same centre. The total numbers of government services in existence are listed as a potential variable.

3 - Commercial Activities

Another variable concerned with the role of small towns as central places belongs to the commercial function. Centres with larger commercial activities have an economic link with urban centres, and this directly and indirectly affects the rural economy by stimulating

the development of marketing and transportation facilities. Clearly, the selection of small towns according to this commercial potential would lead to an increase in the opportunities of work in non-agricultural sectors, increase rural incomes, and reduce rural migration. Thus, the numbers of commercial shops in each town are registered as potential variables for selection of small towns.

4 - Small-Scale Industrial Activities:

This sector is very rare in the province and is associated with commercial activities. The development of this sector would create new opportunities for jobs, and stimulate the investor to develop local resources. Thus, centres with significant industrial establishments can affect rural industry which will in turn lead to further rural developments.

11.3 Factor Analysis as a Method for Classification of Small Towns for Rural Development Activities

11.3.1 Introduction

Factor analysis or 'principal component' is a branch of multivariate statistical analysis. It can be used not only to represent the relationships among the sets of many interrelated variables, but also to interpret the relationships resulting from each of the separate factors. Kim (1976, p249) pointed out that:

The single most distinctive characteristic of factor analysis is its data reduction capability. Given an array of correlation coefficients for a set of variables, factor-

analytic techniques enable us to see whether some underlying pattern of relationships exists such that the data may be 'rearranged' or 'reduced' to a smaller set of factors or components that may be taken as source variables accounting for the observed interrelations in the data.

In factor analysis there is no restriction on the content of the data. Any matrix can be factor analyzed, but not all matrices will yield scientifically useful factors. The value of factor analysis is dependent on the meaningfulness of the variability in the data. For instance, if the data have no variation, this means that all values are the same and no more than one factor is obtained from the data. Moreover, if the data have only random or chance variations, then factor analysis will delineate only patterns of chance covariation. So, the meaningful variation varies of course with the research goal. (Rummel, 1970, p13.)

By using the SPSS computer programme, factor analysis can be produced in three ordinary steps.

- 1 - **The preparation of the correlation matrix.** Under this step, the data used in this study is constructed by KR matrix, where K is the set of towns and R is the variables discussed before. So, there are 31 towns and 13 variables, which produce a 31.13 data matrix (see table 11.1). This matrix will be used as a basic input to the factor analysis in this study.
- 2 - **Extraction of initial factors.** The objective of this step is to obtain the principal components, which are extracted from the matrix in descending order of magnitude. The first component is

the combination accounts for the largest amount of the variation in the total data. The second component is the next largest amount of variance and is uncorrelated with the first. This means that the second component may be defined as a linear combination of variables that accounts for the most residual variance after the effect of the first component is removed from the data. Subsequent components are defined similarly until all the variance in the data is exhausted. (Kim, 1975, p270.)

- 3 - **Rotation of factors into terminal factors.** This step is concerned with rotation focusses on transforming the factors in order to be more interpretable. Since one of the aims of factor analysis is to identify the factors that are substantively meaningful, the rotation phase of factor analysis would simplify the factor structure and each variable is accounted for by a single common factor. In fact, there are three rotational methods, "quartimax, varimax, and equimax". The varimax rotation method will be used. The objective of this method is to simplify the columns of factors matrix and to define a simple factor as one with only 1s and 0s in the column. Such a simplification is equivalent to maximizing the variance of the squared loadings in each column, hence the name VARIMAX. This method of rotation is the most widely used. (Kim, 1975, p485.)

11.3.2 Factor Scores Analysis

The result of factor scores analysis shows that four initial factors were obtained. Table 11.2 represents these factors with their

e 11.1 Variable Matrix Used for Classification of Small Towns

	1	2	3	4	5	6	7	8	9	10	11	12	13
Al Tuwal	105	22	6	3	9	3	4	3	17	19	4735	22	119
Al Mussam	25	21	6	3	34	3	4	3	13	22	4212	7	43
Al Ahad	56	34	6	3	24	3	4	4	24	17	5944	63	218
Dihamah	24	20	2	1	2	3	2	1	4	23	1081	4	11
Al Madhaya	22	16	2	1	38	3	4	2	13	18	2190	8	59
Ar Rayan	50	29	6	3	39	3	3	2	14	16	2875	5	32
Dhamad	166	16	6	3	80	3	3	4	22	20	7357	34	182
Ash Shuqairi	16	29	4	3	14	3	2	3	13	24	2650	6	47
Al Qoz	30	21	5	3	27	3	3	2	7	23	1916	4	18
Al Aliyah	2	21	2	1	1	3	3	2	8	12	1825	3	12
Mis ^h Liyah	36	7	5	3	15	3	3	2	7	14	2379	5	17
Ad Darb	15	30	5	3	27	3	4	4	21	53	5658	22	139
Ash Shuqaiq	6	12	2	1	18	3	3	3	8	79	1960	6	16
Al Qahmah	2	14	2	1	2	3	3	1	6	117	1424	4	15
Itwad	6	7	2	1	35	3	2	1	7	34	1230	3	8
Al Khawbah	46	33	2	3	28	2	3	4	14	47	2937	13	112
As Salb	24	13	3	2	18	2	2	1	6	66	1232	3	19
Farasan	5	12	2	1	1	3	2	2	15	70	2488	7	64
Al Aridah	48	100	6	3	28	2	3	4	14	29	4443	14	98
Al Humirah	16	37	2	2	2	2	2	1	5	45	1830	2	9
Iban	28	57	5	2	14	2	3	4	16	54	2210	7	69
Harub	32	24	5	2	7	2	3	4	11	48	2318	8	61
Al Kudmi	17	38	2	1	2	2	2	1	5	18	1110	3	13
Al Haqu	14	16	4	2	7	2	3	4	12	35	3488	7	59
Qais	6	5	3	2	1	1	1	1	4	49	622	2	11
Ad Dyer	46	35	5	2	29	1	3	4	15	68	3320	9	84
Munjid	28	8	4	2	6	1	1	1	5	64	1225	2	8
Al Hashir	5	5	2	2	1	1	1	1	4	84	1140	4	6
Ar Rabuah	16	7	2	2	1	1	1	1	6	91	1450	2	8
Al Zaydan	6	5	2	2	3	1	1	1	4	71	1125	1	5
Ar Raith	23	13	2	2	5	1	1	2	6	59	1430	3	16

Some variables refer to:

- Rural population density in each emirate
- Number of villages in each emirate
- Number of crop options in each emirate
- Score of farm types in each emirate
- % of suitable agricultural land
- Scores of topography
- Scores of existing roads
- Scores of market system
- Total number of government services in each town
- Distance (km) to nearest urban centre
- Total number of town population
- Total number of industrial activities in each centre
- Total number of commercial activities in each centre

corresponding eigenvalue and percentage variance accounted by each of the four factors. This was 83 per cent of the total variance. Clearly, the higher the eigenvalue and percentage of variance, the greater the influence of the variable on the factor. The first factor or component has the maximum eigenvalue 7.0819 and accounts for 54.5 per cent of the total variance. This factor can be considered as the strongest factor, since it contributes the most significant variables affecting the potential of small towns.

The second factor has the next largest eigenvalue, i.e. 1.4651 and 11.4 per cent of the total variance. The third factor has an eigenvalue of 1.1667 and accounts for 9 per cent of variance; and finally the fourth factor has the lowest eigenvalue (1.0484) and percentage variance (8.1).

Table 11.2 Contribution of Initial Factors

Factor	Eigenvalue	Percentage of Variance	Cumulative
I	7.08197	54.5	54.5
II	1.48516	11.4	65.9
III	1.16667	9.0	74.9
IV	1.04844	8.1	83.0

The identification of each factor depends on the strength of the correlation coefficients between it and the primary variables. This means that when the loading is zero, then the variable is not related to the factor, while the loading is close to one, the variable is almost perfectly related to the factor. In this study all variables

with coefficients equal to or greater than 0.50 are considered as related variables than those with coefficients lower than 0.50.

Table 11.3 shows the importance of each factor. Clearly, factor 1 is considered as the most significant factor, since it constitutes most of the variables. These variables are:

Variable 13:	Total number of commercial activities
Variable 9:	Total number of government services
Variable 12:	Total number of industrial activities
Variable 11:	Total number of town populations
Variable 8:	Scores of market system
Variable 1:	Rural population density
Variable 7:	Scores of existing roads

This factor gives the greatest weight to the potential of small towns as central places for socio-economic functions, where the commercial, administrative, and industrial services, and the market system are considered as important functions. These services are supported significantly by the number of the town population, rural population density, and road accessibility. This combination represents the fact that towns with high socio-economic functions are distinguished as important weekly markets with high numbers of residents and rural population density, and connected by asphalted roads.

From the factor scores (see table 11.4), there are eleven towns with positive scores. These towns mostly act as weekly markets. The towns of Al Ahad, Dahmad, Ad Darb, and Al Tawal show high positive scores. The first three towns are characterized by their larger weekly

markets and their significant role as centres for administrative services, while the function of the fourth town is due to its location as a centre of security and customs that has given impetus to the development of this town. The remaining towns also act as traditional weekly markets, which makes them attract some administrative, commercial, and industrial activities. The town of Farasan has no weekly market but its socio-economic functions are due to its location as an island, making it necessary for the government to provide essential services there, which in turn encourage commercial activities.

Table 11.3 Rotated Factor Matrix

Variables	Factor 1	Factor 2	Factor 3	Factor 4
Variable 1	0.60474	0.62899	0.07159	-0.11395
Variable 2	0.17304	0.15506	-0.01387	0.79268
Variable 3	0.43447	0.66199	0.16223	0.39724
Variable 4	0.30991	0.78087	-0.64655	0.30888
Variable 5	0.07292	0.18903	0.51627	0.60036
Variable 6	0.26092	-0.03582	0.89968	-0.03569
Variable 7	0.52258	0.05551	0.66922	0.40290
Variable 8	0.71783	0.11397	0.09504	0.55428
Variable 9	0.87223	0.11278	0.27691	0.31054
Variable 10	0.00184	-0.60715	-0.64061	-0.05894
Variable 11	0.82904	0.39314	0.22547	0.19942
Variable 12	0.85714	0.23980	0.15900	-0.00273
Variable 13	0.91300	0.25150	0.12103	0.19043

Source: Output of factor analysis

On the other hand, there are twenty towns with negative scores in this factor. All these towns have no weekly market, except Ash Shuqairi and Ash Shuqaiq where small weekly markets are held. The towns with high negative scores, such as Al Qoz, Al Qahmah, Itwad,

Dihamah, Ar Rayan, Mas[^]Liyah, Al Humirah, Al Kudmi, Munjid, Qais, As Salb, Al Aliyah, and Al Zaydan, are too small. Fig.11.1 shows the towns with positive and negative scores according to this factor and fig.11.2 shows their distribution in the province.

The second factor is influenced by three variables (see table 11.3):

Variable 4:	Score of farm types
Variable 3:	Number of crop options
Variable 1:	Rural population density

The combination of these variables give a great weight to the potential of small towns for agricultural development and is supported by the variable of rural population density. Indeed, this represents the fact that the pattern of rural settlements is closely adapted according to the cultivated land where natural conditions are favourable enough to meet the need of rural populations.

The factor score table (table 11.4) shows thirteen towns with positive scores. The towns with high positive scores are Dhamad, Al Tuwal, Al Qoz, Ar Rayan, and MasLiyah. These towns are located in the most fertile land where the best soil and flood irrigation are available.

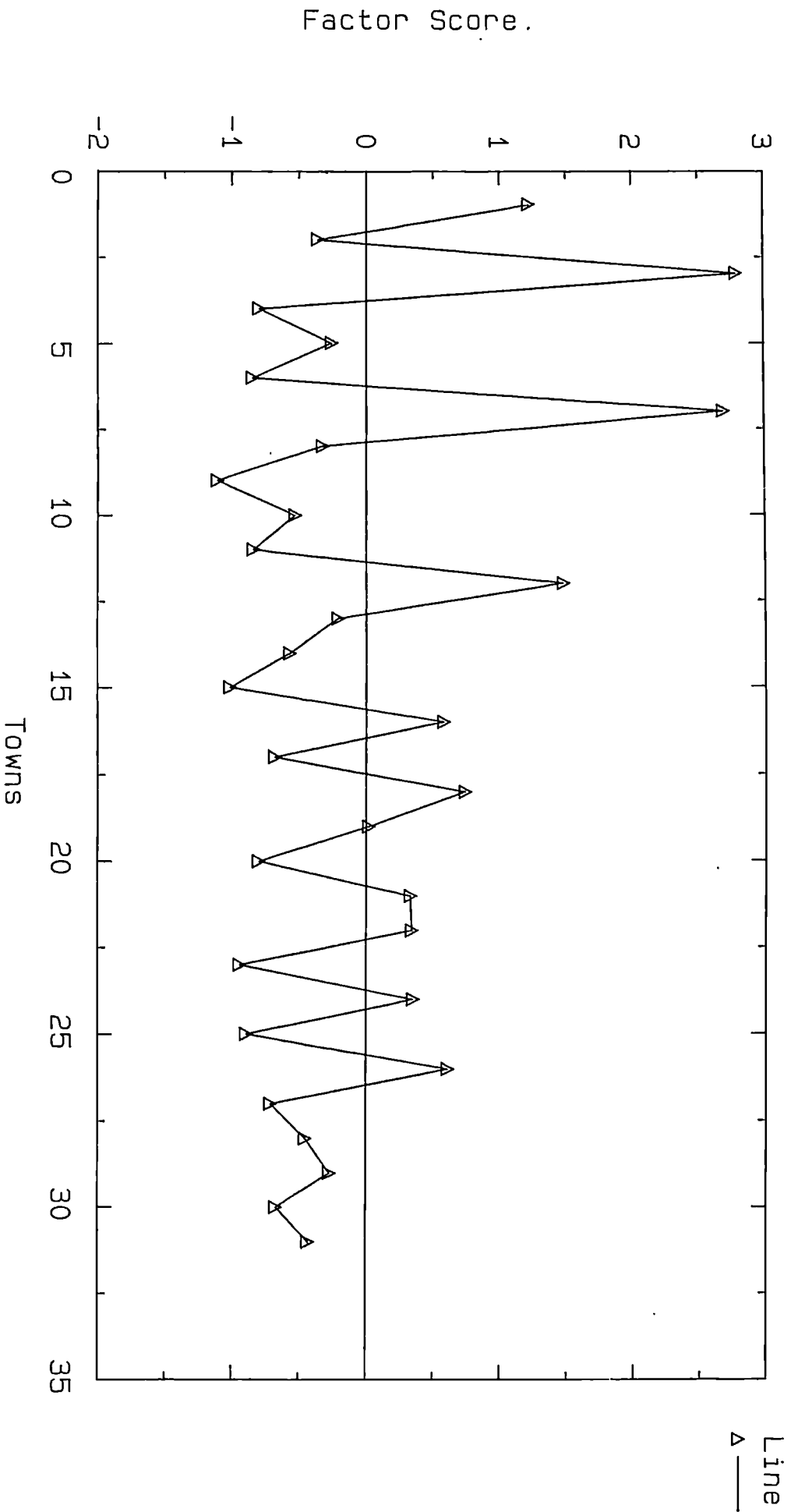
Moreover, eighteen towns have a negative score in this factor. Towns with high negative scores are Al Madhaya, Al Aliyah, As Shuqaiq, Al Qahmah, and Farasan. Clearly, the weakness of these towns for

Table 11.4 Small Towns and Factor Scores

No.	Towns	Factors			
		1	2	3	4
1	Al Tuwal	1.22175	1.42510	0.58336	-0.88328
2	Al Mussam	-0.36163	0.82897	1.27071	0.89563
3	Al Ahad	2.79630	0.31565	0.53995	-0.19756
4	Dihamah	-0.80666	-0.26637	0.87019	-1.15569
5	Al Madhaya	-0.26157	-1.05868	2.03598	0.18067
6	Ar Rayan	-0.85198	1.44750	1.16598	0.77678
7	Dhamad	2.69879	1.88855	0.83000	-1.90229
8	Ash Shuqairi	-0.32585	0.61358	0.31750	0.31209
9	Al Qoz	-1.11295	1.17952	1.00240	0.33892
10	Al Aliyah	-0.53461	-0.77580	1.23491	-0.62052
11	Masliyah	-0.84831	1.41912	1.00377	-0.58400
12	Ad Darb	1.48426	-0.52465	0.44434	1.00816
13	Ash Shuqaiq	-0.21850	-1.97088	0.60499	0.07212
14	Al Qahmah	-0.57200	-2.51044	-0.08496	-0.20930
15	Itwad	-1.01403	-0.67278	1.37870	-0.45349
16	Al Khawbah	0.58692	-0.12110	-0.32978	0.94429
17	As Salb	-0.68373	-0.00961	-0.25260	-0.27257
18	Farasan	0.74827	-1.73521	0.15336	-0.88923
19	Al Aridah	0.02785	0.87449	-0.72149	3.14852
20	Al Humirah	-0.80133	0.04532	-0.39117	-0.10346
21	Iban	0.33009	-0.51055	-0.62068	1.78603
22	Harub	0.34242	-0.12372	-0.41728	0.43702
23	Al Kudmi	-0.94997	-0.16303	0.15672	-0.30516
24	Al Haqu	0.35476	-0.08399	-0.16599	0.26475
25	Qais	-0.89244	0.50013	-1.16844	-0.80716
26	Ad Dyer	0.61056	-0.27003	-1.09532	1.56697
27	Munjid	-0.71337	0.67612	-1.36749	-0.63900
28	Al Hashir	-0.45298	-0.23247	-1.60575	-0.75652
29	Ar Rabuah	-0.27302	-0.28622	-1.73047	-0.72837
30	Al Zaydan	-0.67435	-0.00898	-1.39143	-0.71602
31	Ar Raith	-0.43466	0.11051	-1.39989	-0.42834

Source: Output of factor analysis

Fig.11.1 Classification of small towns based on factor 1.



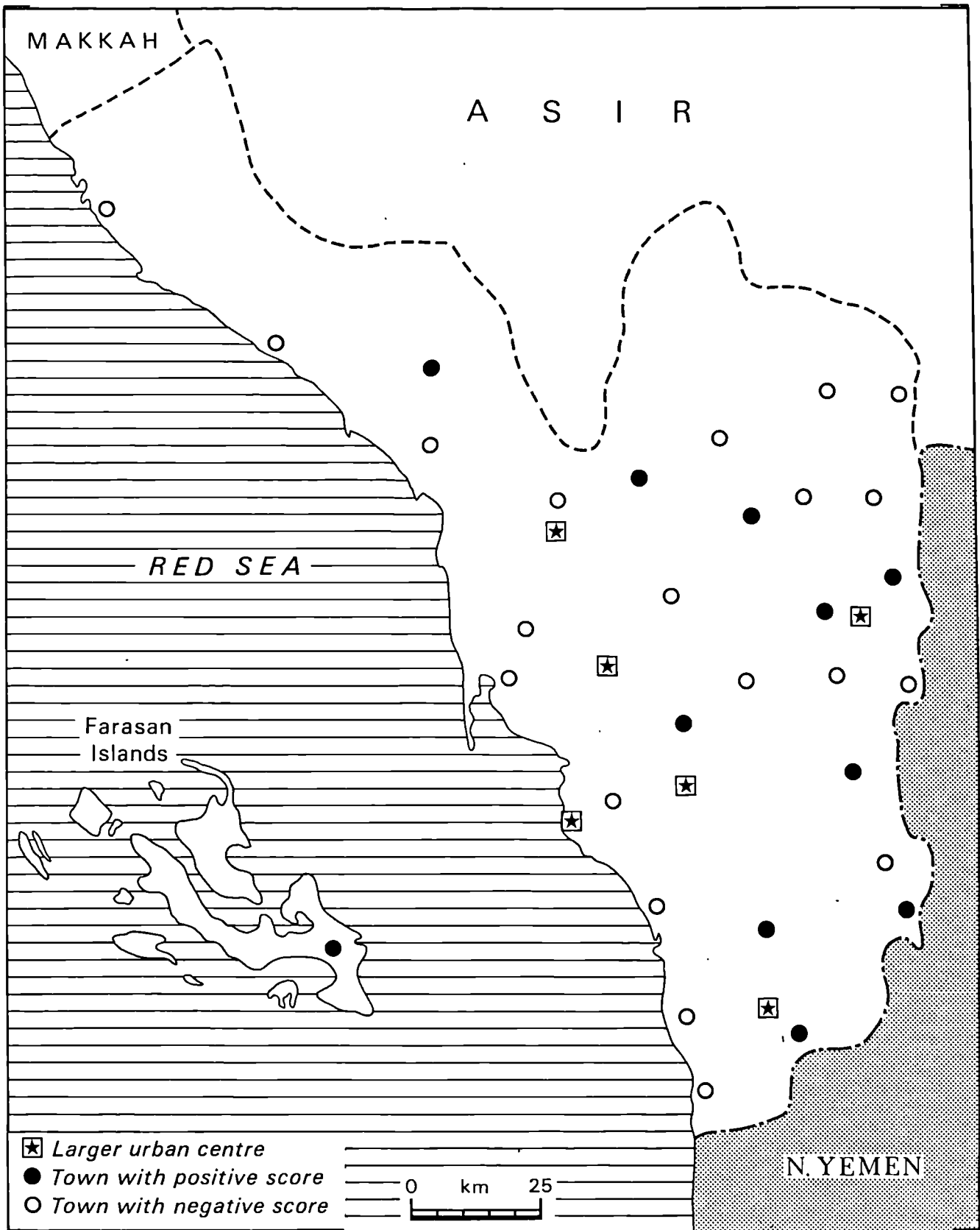


Fig.11.2 Distribution of Small Towns in Jizan Province based on Factor 1

Source: Table 11.4

agricultural development is due to their poor land which is characterized by sandy or salty problems. Fig.11.3 shows the potential of small towns based on this factor and fig.11.4 represents their distribution in the province.

Factor three is influenced by three variables (see table 11.3):

Variable 6: Score of topography

Variable 7: Score of existing roads

Variable 5: % of suitable agricultural land

This factor may be called a topographical factor and is supported by road provision and the percentage of suitable agricultural land. Indeed, this factor shows that towns with good locations are connected by asphalted roads, and possess suitable land for agricultural development.

The factor scores (see table 11.4 and fig.11.5) show sixteen towns with positive scores. Seven of these towns, namely Al Madaya, Itwad, Al Mussam, Al Aliyah, Ar Rayan, Mas Liyah, and Al Qoz, have high positive scores. In addition, there are fifteen towns with negative scores. The towns of Qais, Ad Dyer, Munjid, Al Hashir, Ar Rabuah, Al Zaydan, and Ar Raith show high negative scores. Fig.11.6 shows the distribution of these towns in the province.

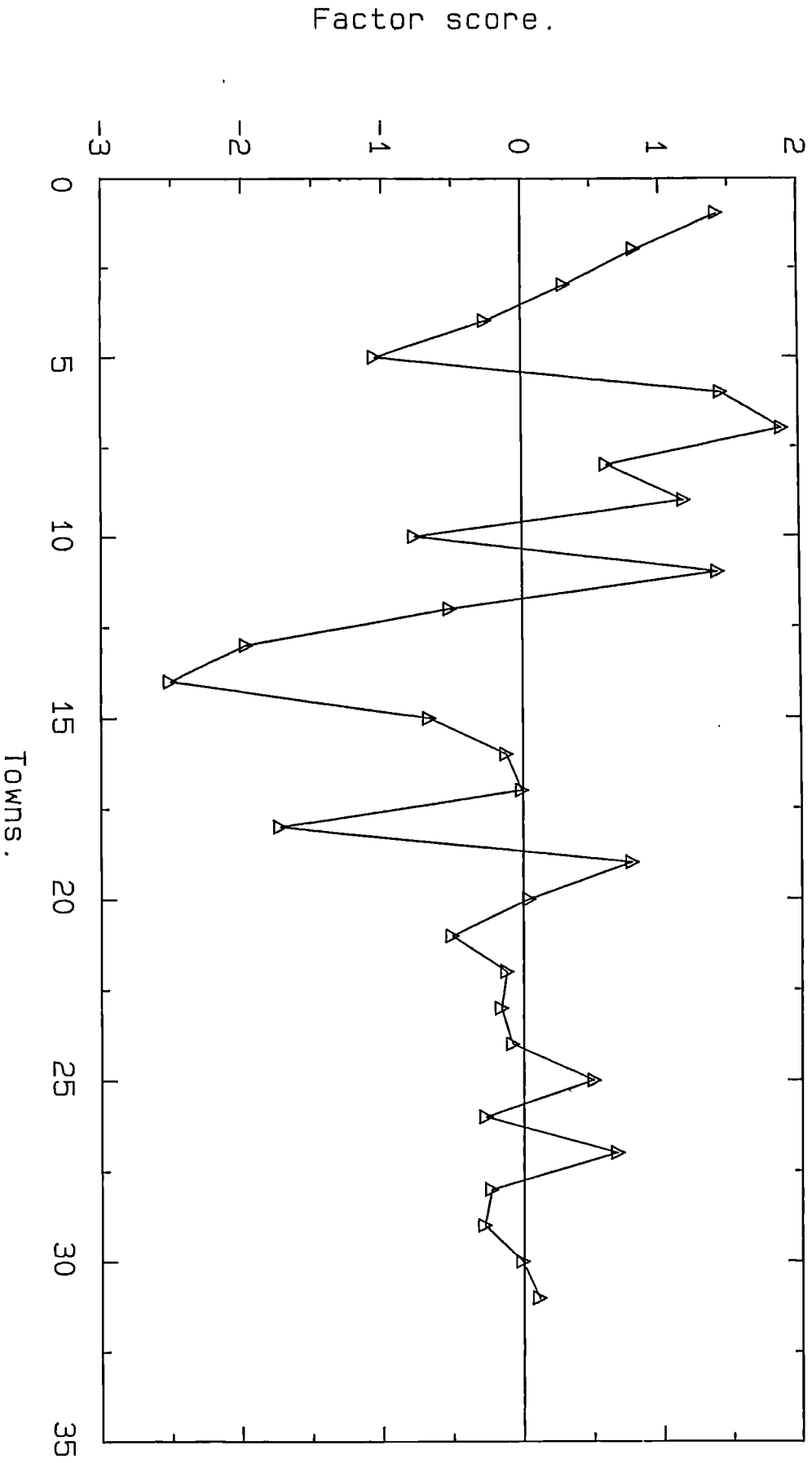


Fig.11.3 Classification of small towns based on factor 2.

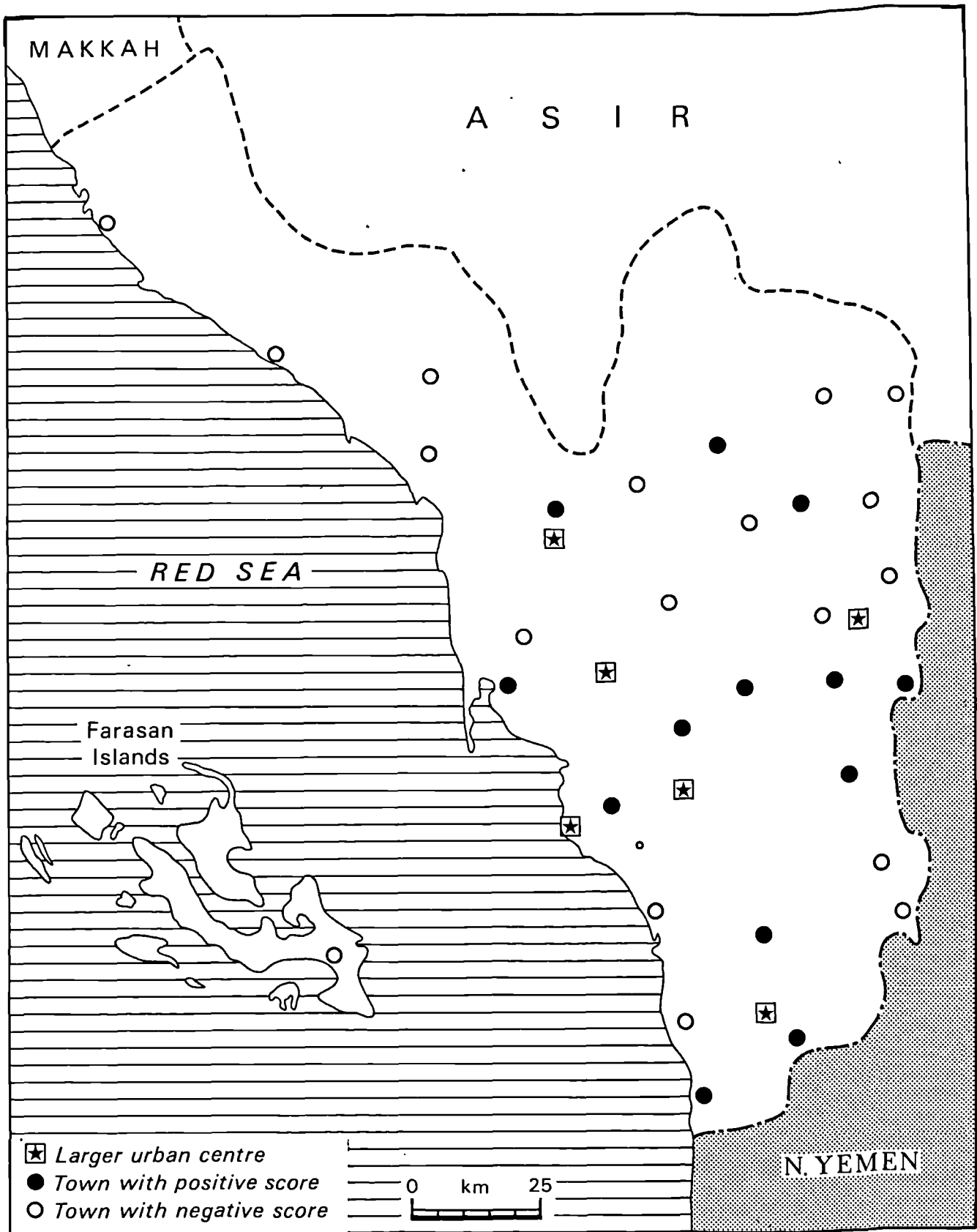


Fig.11.4 Distribution of Small Towns in Jizan Province based on Factor 2

Source: Table 11.4

In factor four, there are three significant variables (see table 11.3):

Variable 2: Number of villages in each emirate

Variable 5: % of suitable, agricultural land

Variable 8: scores of market system

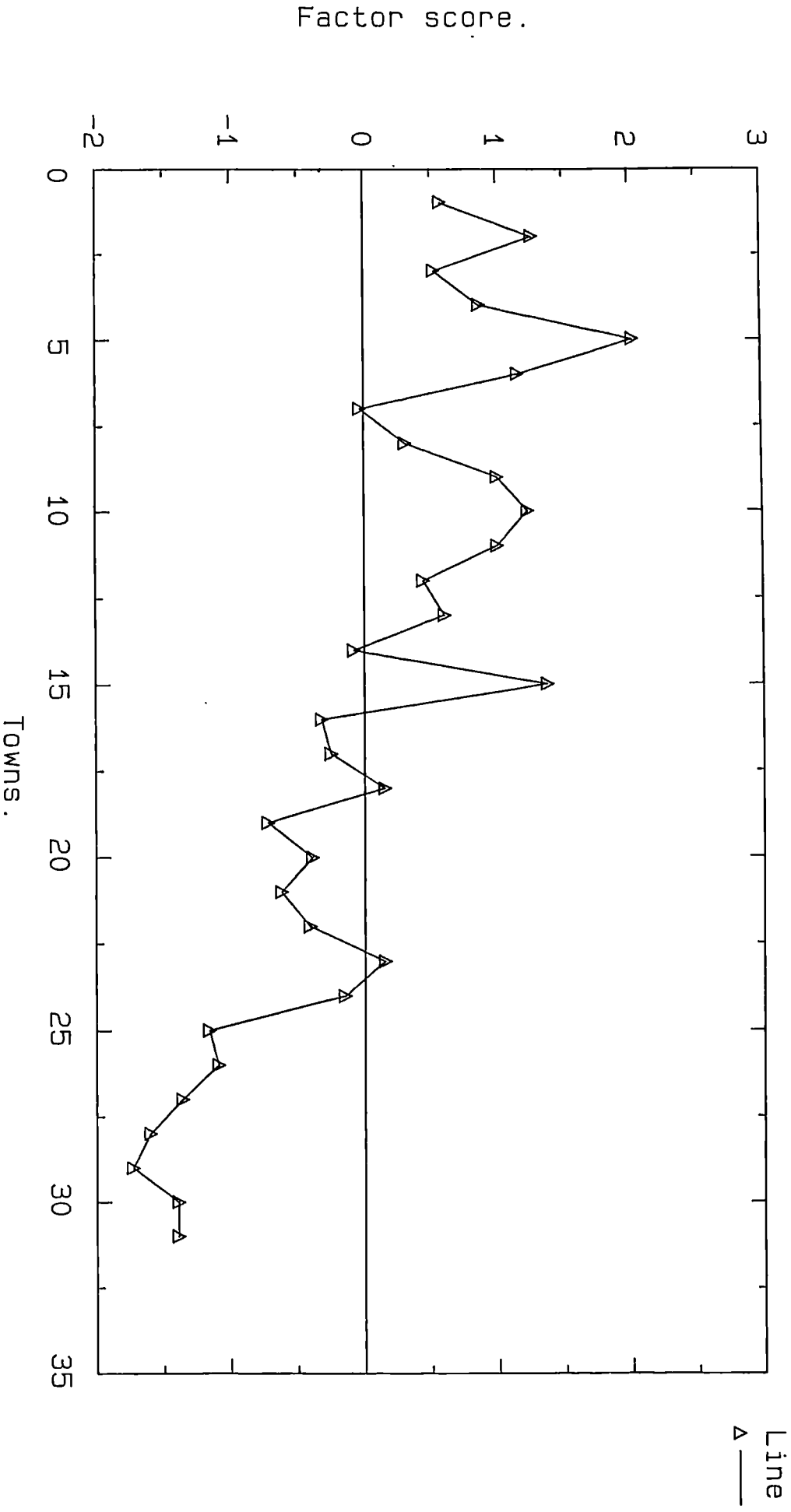
This factor classifies the small towns according to the surrounding villages, and is supported by the suitability of agricultural land and rural marketing systems. Clearly, there is a relationship between the number of settlements on the one hand and agriculture and market system on the other. Most of the towns with a high number of villages have fertility of soil and a ready water supply which have encouraged the rural population to settle down and practise agricultural activities and later to establish a market as a means of exchange.

The factor scores (see table 11.4 and fig.11.7) represent thirteen towns with positive scores. The towns of Al Aridah, Iban, Ad Dyer and Ad Darb show high positive scores. The villages around these towns are distinguished by their small size. Fig.11.8 shows the distribution of towns in the province based on this factor.

11.3.3 Grouping of Small Towns Based on their Priority for Development

The results of the factor analysis show that the first and second factors account for almost 66 per cent of the total variation, which indeed adequately determines the development potential of small towns in Jizan province. In fact, these two factors represent the potential

Fig.11.5 Classification of small towns based on factor 3.



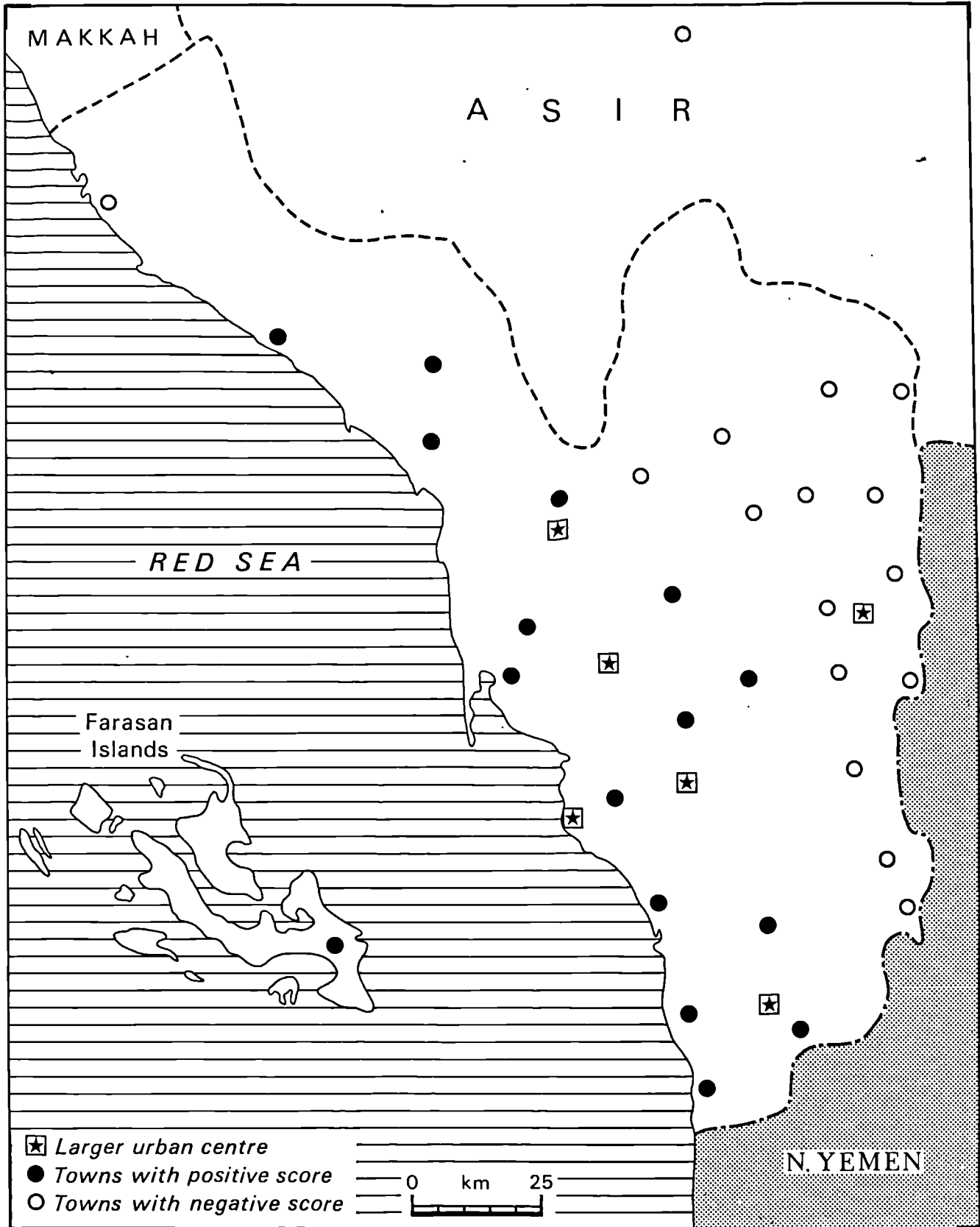
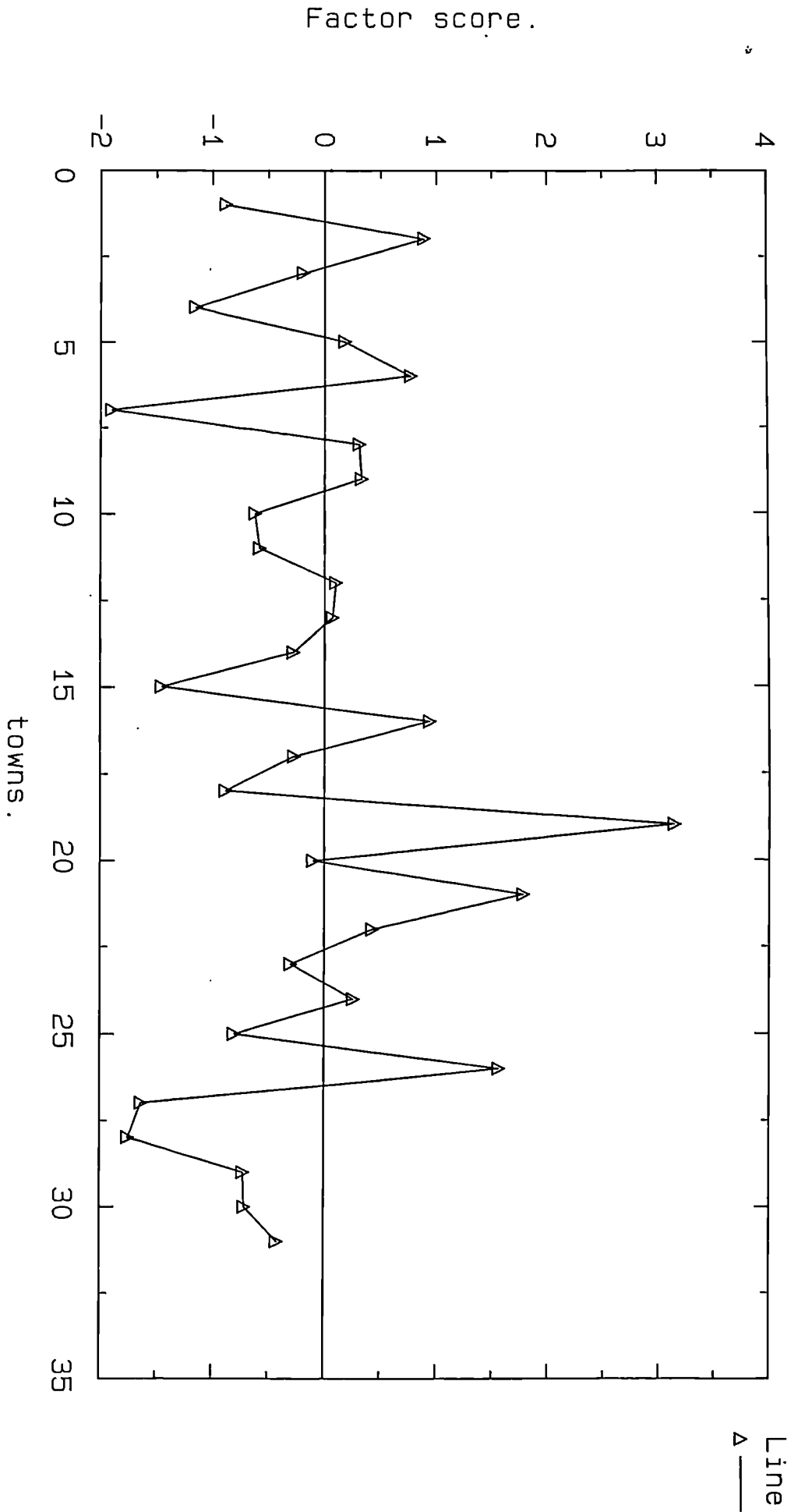


Fig.11.6 Distribution of Small Towns in Jizan Province based on Factor 3

Source: Table 11.4

Fig. 11.7 Classification of small towns based on factor 4.



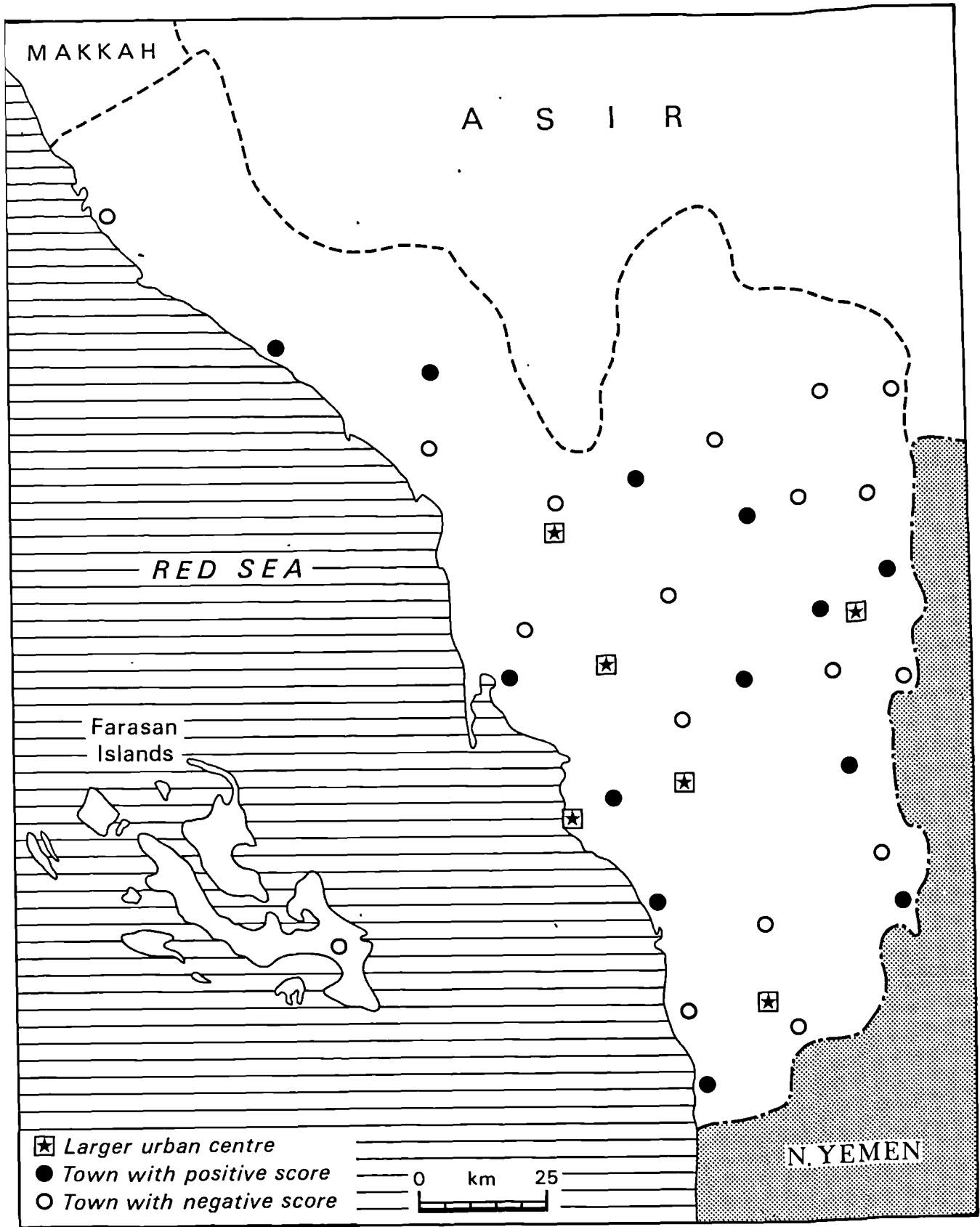


Fig.11.8 Distribution of Small Towns in Jizan Province based on Factor 4

Source: Table 11.4

of small towns as central places for services and agricultural development.

Clearly, these two factors would give a guideline in the distribution of services and facilities according to the potential of small towns. Four groups have appeared from the plotting of the two factors (see fig.11.9). These groups are listed in table 11.5.

The first quadrant, A, includes 4 towns which show positive scores in both factors one and two (commercial and agricultural). These towns are Al Ahad, Dhamad, Al Tawal, and Al Aridah. They are supposed to have high potential for development based on their function as central places in terms of provision of commercial, industrial, and social services, as well as their potential in agricultural development. These towns are characterized by their important weekly markets and also by their wealth of agricultural hinterlands.

Quadrant two is concerned with the group B of towns which have a positive score in the factor of central place functions as commercial and service centres, while they have low scores in the agricultural factor. In fact, trading and small industrial activities are the significant activities for development in these towns. There are seven towns belonging to this quadrant: Ad Darb, Al Khawbah, Farasan, Iban, Harub, Al Haqu, and Ad Dyer. All these towns are characterized by well-known weekly markets except Farasan.

Quadrant three represents the towns in group C with positive scores in the factor of agricultural development, but negative scores

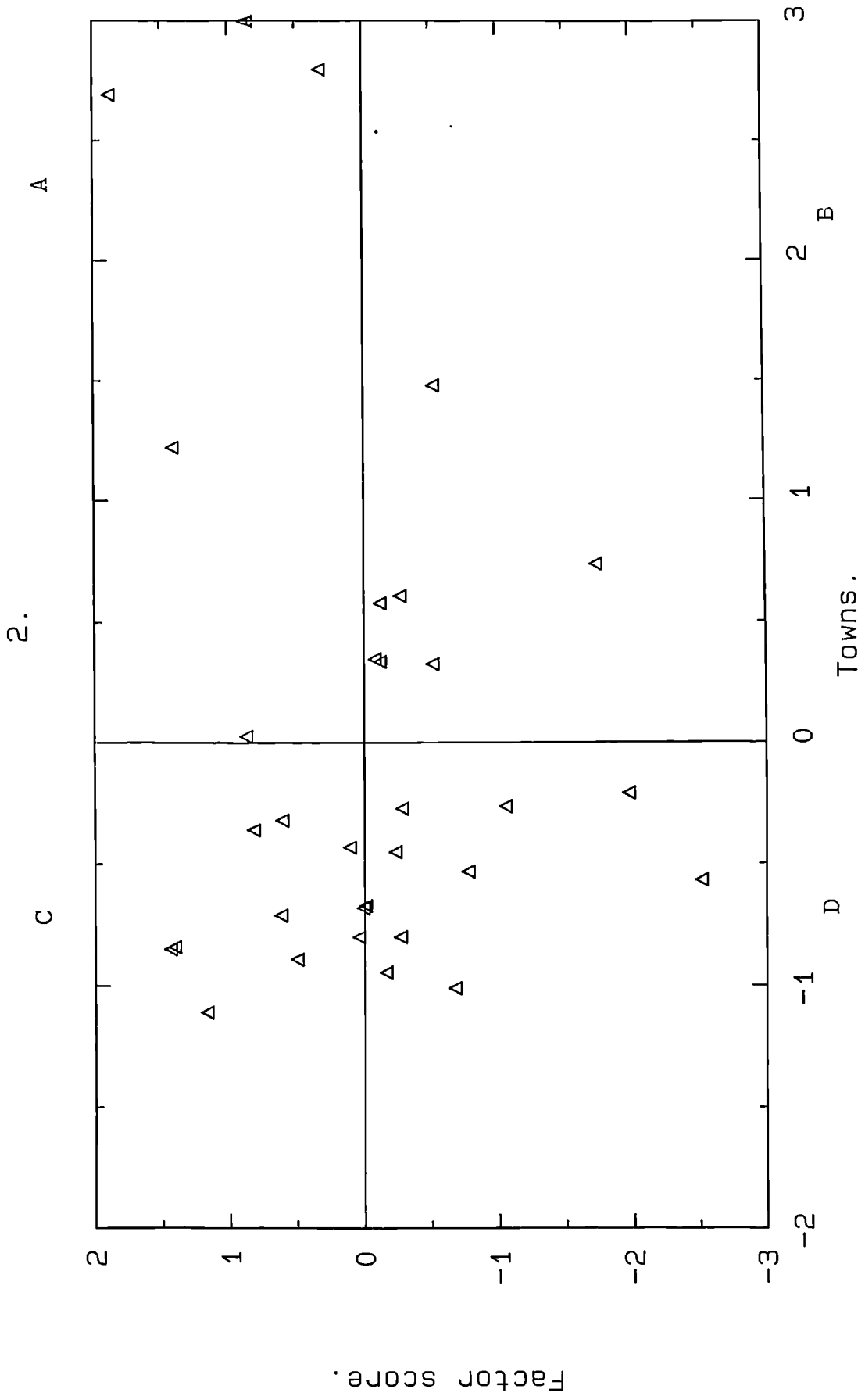
in the factor of commercial functions. This implies that it is necessary to provide these towns with the services that are needed for agricultural production such as seeds, fertilizers, and agricultural implements. The nine towns belonging to this quadrant are namely Al Mussam, Ar Rayan, Ash Shuqairi, Al Qoz, MasLiyah, Al Humirah, Qais, Munjid, and Ar Raith.

Towns in quadrant four show group D with negative values in both commercial and agricultural factors. This implies that the development of these towns should be concerned with provision of the necessary social services for the surrounding rural population. These towns are small and distributed in less productive areas that are related to the high mountains and coast. The eleven towns of the group are namely Dihamah, Al Madhaya, Al Aliyah, Al Kudmi, Al Hashr, Ar Rabuah, Al Zaydan, Ash Shuqaiq, Al qahmah, Itwad, and As Salb.

Table 11.5 Grouping of Small Towns for Development Based on Commercial and Agricultural Factors

First Group (A)	Second Group (B)	Third Group (C)	Fourth Group (D)
Al Ahad	Ad Darb	Al Mussam	Dihamah
Dahamad	Al Khawbah	Ar Rayan	Al Madhaya
Al Tuwal	Ad Dyer	Ash Shuqairi	Itwad
Al Aridah	Al Haqu	Al Qoz	Al Aliyah
	Harub	MasLiyah	As Salb
	Iban	Ar Raith	Al Kudmi
	Farasan	Munjid	Al Hashr
		Qais	Ar Rabuah
		Al Humrah	Al Zaydan
			Ash Shuqaiq
			Al Qahmah

Source: Table 11.4



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11.4 Proposed Distribution of Settlement Hierarchy in the Province after introducing Small Towns to the Urban System

In chapter 9, the urbanization and urban settlement hierarchy has been discussed. Jizan centre represented the first level in the urban hierarchy, since it constitutes a dominant core. It is the capital of the province and where most of the ministry offices are located. Moreover, this centre acts as the largest urban market. Therefore, the town would provide a higher order of goods and services to the population over the province.

The second level of urban hierarchy consists of the larger urban centres of Sabya, Abu Arish, Sametah, Baish, and Fayfa. These centres are considered as important urban markets. They serve a population ranging from 50,000 to 180,000 people spread over the province.

Small towns which have been classified in the previous discussions would be expected to fill the lower levels of urban hierarchy, in order to strengthen and integrate the lower levels of the settlement hierarchy with larger urban centres (see table 11.6 and figs.11.10 and 11.11). Clearly, group A of small towns would be the third order centres. These towns would act as important markets for the rural population ranging from 30,000 to 50,000 inhabitants. Group B of small towns would become fourth order centres. These centres also act as rural markets but less than those of group A. The populations served by these centres vary between 15,000 and 30,000 people.

These two groups (A and B) are the most important centres in rural areas, and for rural development purposes these towns would play

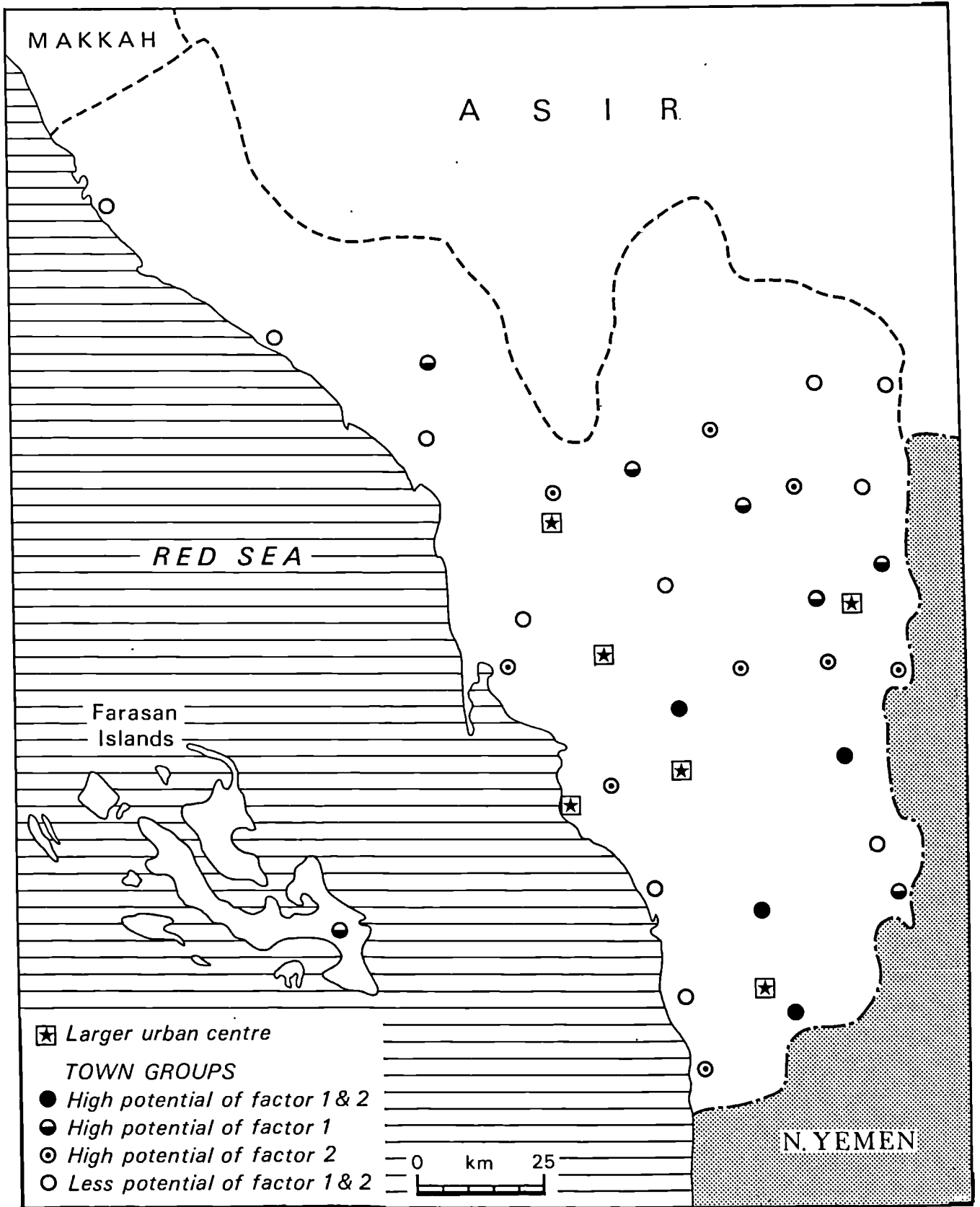
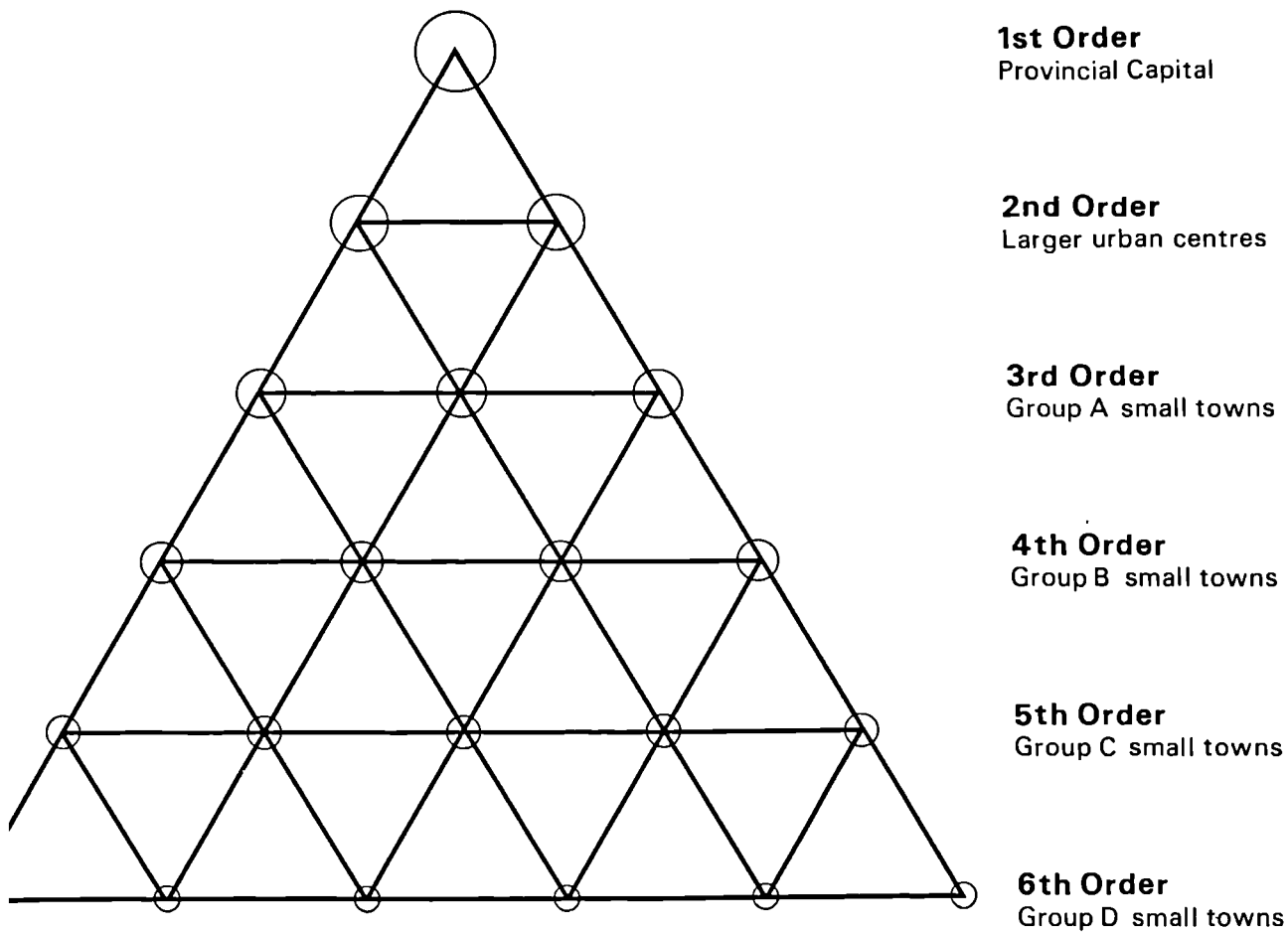


Fig. 11.10 Distribution of small towns in Jizan province according to factors 1 and 2
 Source: based on Table 11.4



.11.11 Proposed Structure of Settlement Hierarchy after the entry of Small Towns

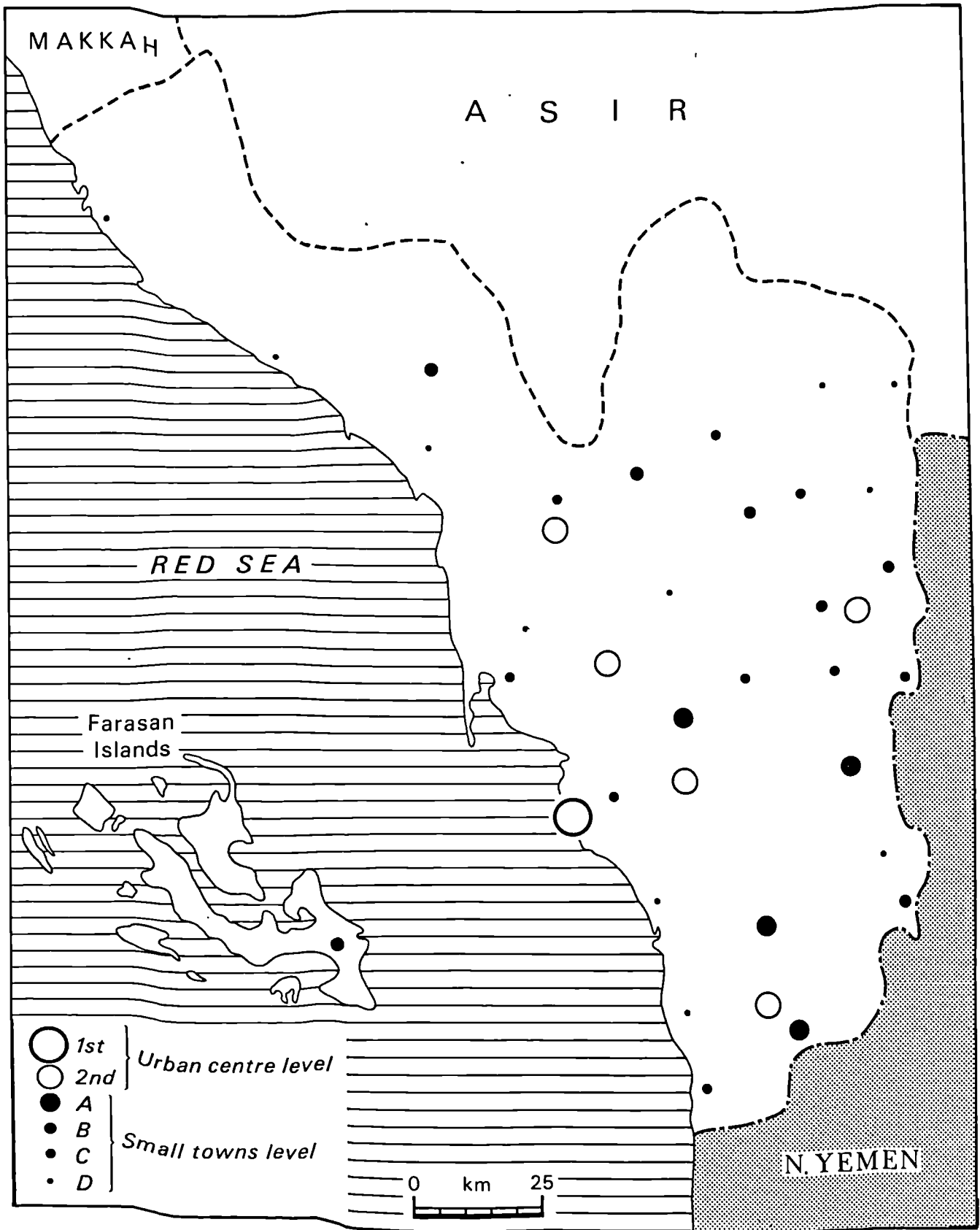


Fig.11.12 Distribution of Settlement Hierarchy in Jizan Province after the Classification of Small Towns

a very crucial role as traditional rural markets with which the rural population have regular contact. Obviously, the market days play a significant role in the life of the rural population by providing 'low order' functions such as the acquisition of foodstuffs, clothes, and craft manufacturers. In fact, these towns have two significant links between the small rural settlements and urban centres as well as between them and their surrounding villages. On the market days, traders bring imported goods from larger urban centres to weekly markets to sell them. Moreover, these centres are places where the farmers sell their produce and purchase the things they need.

In addition to commercial activities, these towns provide small industrial functions which are not present in the rest of the rural towns. These functions belong to repair activities, construction materials, metalwork, and some simple food processing. These towns also provide some administrative services such as police, secondary schools, health services, and post offices. Indeed, in this respect, these towns should be developed as small urban centres and the most convenient and accessible centres for the rural population.

Below the rural markets there is group C which would be the fifth order centres. These towns show high potential for agricultural development. They would provide services to populations ranging from 5,000 to 15,000 inhabitants. Finally, group D of small towns would be the sixth order centres. These towns have minimum potential in both commercial and agricultural areas. They should be developed to be local service centres to provide the necessary services to rural population ranging from 2,000 to 5,000 inhabitants.

Table 11.6 Settlement Hierarchy in Jizan Province after introducing Small Towns

Category	Settlements	Range of Served Population	Status
1st order	Jizan	Population of the province	Capital of the province and the largest urban market (existing level)
2nd order	Sabya, Abu Arish, Sametah Baish, Fayfa	50,000-180,000	larger urban centres (existing level)
3rd order	Al Ahad, Dahmad, Al Tuwal, Al Aridah	30,000-50,000	Group A of small towns Larger rural markets (proposed level)
4th order	Ad Darb, Al Khawbah, Ad Dyer, Al Haqu, Harub, Iban, Farasan	15,000-30,000	Group B of small towns Small rural markets (proposed level)
5th order	Al Mussam, Ar Rayan, Ash Shuqairi, Al Qoz Mas ^h Liyah, Ar Raith, Munjid, Qais, Al Humirah	5,000-15,000	Group C of small towns Small rural service centres (proposed level)
6th order	Dihamah, Al Madhaya, Al Aliyah, As Salb, Al Kudmi, Al Hashr, Ar Rabuah, Al Zaydan, Ash Shuqaiq, Al Qahmah, Itwad	2,000-5,000	Group D of small towns Local service centres (proposed level)

At the end of this discussion, it will be useful to examine the pattern of distribution of the settlement hierarchy after the entry of small towns into the urban system. The Nearest-neighbour analysis can be used for this purpose, to represent how the distribution of centres

tend to be cluster, random, or dispersion types. All the levels of settlements can be examined under the following categories:

1. Larger existing urban centres + A centres.
2. Larger existing urban centres + A + B centres.
3. Larger existing urban centres + A + B + C centres.
4. Larger existing urban centres + A + B + C + D centres.

Table 11.7 represents the results of the analysis. Two main points can be observed. First, the nearest-neighbour value (R) shows a marked tendency to rise above 1 in all categories. Second, the average nearest-neighbour distance has decreased with categories of centres.

Obviously, in the first category, which includes the larger existing urban centres + group A of small towns, the pattern distribution of the centres tends to be random, where the R value (1.023) is significantly not different from 1 at the .05 level. In the second category, the examination was concerned with the above centres + group B of small towns. In this respect, the pattern of distribution of centres has changed. The R value has increased to 1.313 and becomes significantly different from 1 at the .05 level, i.e. the entry of group B of small towns into the above centres has changed the pattern of distribution of centres to be more dispersed. Moreover, the distance also decreased from 19.3 km to 18.76 km.

Table 11.7 Nearest-Neighbour Statistics (R) for Settlement Hierarchy in Jizan Province

Hierarchical Level	No. of Settlements	Mean observed distance (km) "ra"	Expectant mean distance "re"	NN index "R"	Significant departure from random at .05 % level
1. Existing Urban Centres +A centres	10	19.3	18.867	1.023	NO
2. Existing Urban Centres +A+B centres	17	18.765	14.286	1.313	YES
3. Existing Urban Centres +A+B+C centres	26	16.076	11.494	1.398	YES
4. Existing Urban Centres +A+B+C+D centres	37	15.459	9.652	1.602	YES

Note: All measurements are taken from the 1:50,000 Jizan topographical map sheets.

In the third category, group C of small towns has been added to the above levels. The result of the analysis shows that the R value of this level has also increased to 1.398, indicating a significant departure from random at .05 level. In addition, the average nearest-neighbour distance in this category has decreased to 16.076 km. In the last category, the pattern distribution of all the centres, from larger urban centres to lowest group D centres, has been examined. The result shows that the greatest tendency is toward dispersion of settlements, where the R value reached 1.602 indicating a tendency for the centres to be more dispersed towards regularity than in a random pattern as

shown in the first category. The average nearest-neighbour distance is also decreased to 15.45 km.

It may be concluded that the entry of small towns into the urban system would not only contribute to increasing the spatial pattern of urban settlements toward greater dispersion, but it would also increase the rural accessibility to services.

11.5 Conclusion

The factor analysis has been carried out in this chapter to determine the potential of small towns for development activity. The results of these analyses indicates that there are two important factors controlling the potential of small towns, i.e. commercial and agricultural factors. The commercial factor is considered to be an essential factor.

According to these two factors, the rural towns have been classified into four groups. The first group represents a high potential for commercial and agricultural sectors. The second group shows a higher potential for commercial rather than for agricultural development. The third group has a higher potential for agricultural development rather than for commercial activities, and finally the last group shows low potential for either activity.

Moreover, it is suggested that by the entry of small towns into the urban system, the settlement hierarchy can be divided into six categories. The objective of this is to guarantee speedy development

of services and facilities in remote rural areas, as well as simply to link the rural areas with urban centres.

Clearly, the potential of small towns conceived in this study would offer a vital strategy for rural development in less developed regions such as Jizan province. The economic and social conditions of the rural areas would be improved through the provision of the necessary economic and social services appropriate to the potential of each group. The services recommended to be located in small towns at the various levels and the implementation policy required to establish the new role of small towns will be taken up in the next chapter.

Chapter 12

Programmes and Implementation of Small Towns Approach as Development Strategy

12.1 Introduction

In the previous chapter, the potential of small towns has been determined. However, this potential by itself is not enough to improve the rural economy and to transform the present relative poverty of the rural population and their living conditions. There are two particular considerations which should be attended to in relation to these towns in order to enable them to perform this new role, viz:

- * Providing small towns with the necessary programmes that are required for rural development.
- * Vigorous implementation of these development programmes.

Indeed, a positive interaction between these two approaches in increasing the role of small towns in rural areas would be a significant step leading to successful rural development, not only by stimulating and supporting rural economic growth in the province, but also by promoting social development of the communities.

Obviously, the role of government in guiding this overall policy is vital not only for achieving the regional development objectives, but also for the national development goals. The two

considerations noted above will be discussed in detail below.

12.2 Proposal for Services

12.2.1 The Need for Services

For rural development, a series of threshold values of services must be reached in order to generate development growth in these areas. The evidence shows that there is a wide difference between the urban and rural areas, reflecting the fact that in urban areas the threshold value of economic and social services has been reached whereas in the rural areas the threshold value of most necessary services is non-existent.

It is worth recording the high demand for services as stated by respondents during the field survey. The data collected from the answers of respondents are listed in table 12.1 and from this it will be seen that the greatest priority among rural residents was accorded to infrastructure services such as paved rural roads, water, and electricity supply. The demand for these services exceeds the existing supply. It was observed that more than 90 per cent of respondents were deeply concerned about the absence or inadequate distribution of these services in rural areas. A road network was nominated as the first desideratum in the rural areas, i.e. by 96 per cent of respondents. This was followed by water and electricity supply with 93 and 90 per cent of respondents respectively.

Indeed the high demand for these services is confirmed by the

fact that 82 per cent of villages are still served by sandy or clay-track roads. Seventy-three per cent of the villages are also still without a drinking-water supply and 74 per cent of villages are not connected to an electricity power supply.

Table 12.1 Desiderata of the Rural Population According to Respondents, 1989

Desideratum	No of Respondents	Percentage
Rural Paved Roads	118	96
Water Supply	115	93
Electricity Supply	111	90
Waste Collection	110	89
Health Services	106	86
Agricultural Services	95	77
Education Services	87	71
Housing Loans and Planning	79	64
Fire Services	71	58
Rural Transport	64	52
Postal Services	61	50
Civil Office Services	59	48
Telephone	53	43
Social Security Offices	52	42
Marketing and Food Provision	48	39
Gas Service	27	22
Religious Services	12	10
Sport and Recreation Services	17	14
Flood Protection	6	5

Source: Fieldwork, 1989

The above requirements were immediately followed by the health and waste disposal facilities. The most important desideratum is a waste collection service, the need for which was mentioned by 89 per cent of respondents. During fieldwork it was observed that this service is very rare in the rural areas, so that the majority of rural settlements suffer from a neglect of environmental health services. The demand for this service is confirmed by the fact that

there was a small proportion of villages (18 per cent of the total villages) that are served by municipality and cluster village centres. The second high demand was related to medical services with 86 per cent of respondents expressing a desire for improvement, the majority requirement being for hospital services, since at present 66 per cent of respondents have to travel more than 30 km to the nearest hospital, particularly those living in the north and south-west of the plains, in the hilly and in the mountain areas.

After the infrastructure and health services, the rural population nominated agricultural services as important desiderata, i.e. 77 per cent of respondents expressed a need for these services. Specific requirements were for agricultural loans, guidance concerning plant production, agricultural marketing, and co-operative services. Indeed, agriculture is the most dominant economic sector in the province, but unfortunately it still pursues very traditional practices producing low levels of income. For example, 67 per cent of rural farmers have incomes of less than SR 1,000 (\$267) per month. Moreover, 93 per cent of farmers cultivate sorghum for family consumption. Modern agricultural equipment is not employed and farmers do not use chemical fertilizers. The majority of farmers have not benefitted from agricultural services and only 6.5 per cent of respondents had received agricultural loans while 11.8 per cent had benefitted from agricultural guidance. Indeed, this sector cannot be developed unless agricultural services are provided for the rural population in accessible places.

The demand for social and community services also far exceeds

the existing supply. With regard to the education services, desire for an improved service was mentioned by 71 per cent of respondents. Most of their requirements concerned secondary schools, particularly girls' schools as well as adult education. Data collected during fieldwork showed that more than 60 per cent of male students and 86 per cent of female students who came from villages to secondary schools had to travel more than 10 km. Another problem is the high rate of illiteracy.

As community services desiderata, the rural population nominated housing loans, fire, transport, postal and telephone services, social security, food, gas, social affairs, religious, sport and flood services. A desire for housing loans and rural planning was mentioned by 64 per cent of respondents. Rural housing is indeed old and badly maintained. 71 per cent of villages in the province were characterized by older types of housing. With regard to housing loans, only 16 per cent of the rural population have received housing loans in the province.

The need for a fire service was mentioned by 58 per cent of respondents. There were five fire stations in the province, ie. an average of one station to 185 villages. More than 62 per cent of respondents were at distances of more than 30 km from this service, particularly those people living in the south-eastern parts like Al Khawbah and those in the northern part living in the emirates of Al Qam^hah, Ash Shuqaiq, and Ad Darb. The need for postal services was also mentioned by 50 per cent of the respondents. In the province there was only one post office for 31 villages which means that about

90 per cent of respondents have to travel more than 10 km to the nearest post office, the majority of them living in the coastal and hilly areas. Moreover, 48 per cent of respondents spoke of their requirements for civil affairs services. There were five offices in the province located in large urban centres so that more than 90 per cent of respondents have to travel more than 30 km to this service.

The need for a telephone services was mentioned by 43 per cent of respondents. This service is an urban phenomenon, while rural areas have been neglected in respect of this facility. Only eight centres have this service, so that over 78 per cent of rural respondents are at distances of more than 20 km from telephones. The need for social security services was also mentioned by 42 per cent of respondents. There were five offices in the province, producing a ratio of one office to 185 villages. About 80 per cent of respondents are thus at distances of more than 20 km from the nearest office.

Finally, a desire was also mentioned for some other services, such as an improvement in gas distribution, particularly in the hilly and mountain areas. This service was mentioned by 22 per cent of respondents. In addition, 10 per cent of respondents spoke of the need for government religious services, such as the provision of mosques.

Obviously, equipment for sport and recreation is unavailable in the rural areas. Nevertheless, the desire for these services was occasionally expressed by 14 per cent of respondents. A very small

proportion (15 per cent) spoke of their requirement for protection from flooding, particularly residents of the hilly and mountain areas.

Clearly, the above analysis shows that the demand for services in rural areas exceeds the existing supply. This may in fact be due to the lack of central places which are important for the provision of the development services. Without these central places, the threshold values of services will not be reached and self-generating growth will not occur. The national development plans have placed a special emphasis on the improvement of the welfare of the rural population by improving both the traditional agricultural sector and the services and facilities in rural areas, so as to make the agricultural sector more productive and rural living conditions more favourable when compared with those in urban areas. Indeed, the objective should be to direct these services and facilities to locations which are accessible to residents in small towns.

12.2.2 Population Threshold

The provision of services and facilities cannot be economically distributed evenly at regular intervals without regard to levels of population "threshold". Moreover, the demand for services also differs from one service to another. Some services are needed frequently and so their establishment requires only a relatively small population, while other services are needed less frequently so that their provision requires a relatively larger population. For example, hospitals are used less frequently than are health centres.

Therefore, hospitals require a larger population to serve than do health centres. Therefore, population threshold is defined as the minimum number of population required to support a given service. In this respect, all the settlements have the minimum level of population threshold for certain functions and should therefore be provided with these functions.

Clearly, the levels of population threshold for services and facilities differ from country to country and from region to region according to the varying levels of development. Unfortunately, in the area studied, there are no data available concerning the provision of services according to the population threshold.

In fact, for rural development, a certain amount of concentration is needed to provide the necessary services for the rural population. While rural towns might be too small to have the required threshold population, a group of settlements considered together may have it. So, in this study, a modification of the concept of threshold can be applied. The rural settlements in each emirate are considered as one unit in order to provide the population threshold levels.

The calculation of population thresholds for services in Jizan province is based on the Reed-Muench method. This method has been developed by Hagget and Gunawardena (1964), who suggested that for a given function (f_i) there is a lower population level at which no settlements have that function, while conversely there is a greater size at which all settlements have that function. By plotting the

values of the number of settlements without the function (F_i), against the value of settlements with that function (F_i), the cross-point of the two parameters on the population scale would provide the median value of the population threshold (see fig.12.1). Using this method, the population thresholds of some available services in Jizan province have been calculated and are listed in table 12.2.

Obviously there are some functions where it was not possible to calculate the relevant threshold, because these functions (such as agricultural banks, housing, transport, and commerce offices) are concentrated in one centre. So, the distribution of these services in rural areas would be based on the development potential factors of small towns.

Table 12.2 Population Thresholds for Services and Facilities in Jizan Province

Functions	Population Thresholds
Municipality Department	26,000
Hospital	20,000
Village Cluster Centre	17,000
Fire Station	21,000
Agricultural Bank	29,000
Agricultural Service Office	18,000
Social Security Office	20,000
Secondary School	13,000
Police Station	9,000
Court	10,000
Health Centre Grade 2	1,800
Health Centre Grade 3	7,000
Sports Club	22,000
Post Office	7,000
Commercial Bank	24,000
Retail Daily Market	8,000
Weekly Market	14,000

Note: The calculation of population thresholds is based on the population of each emirate as one unit.

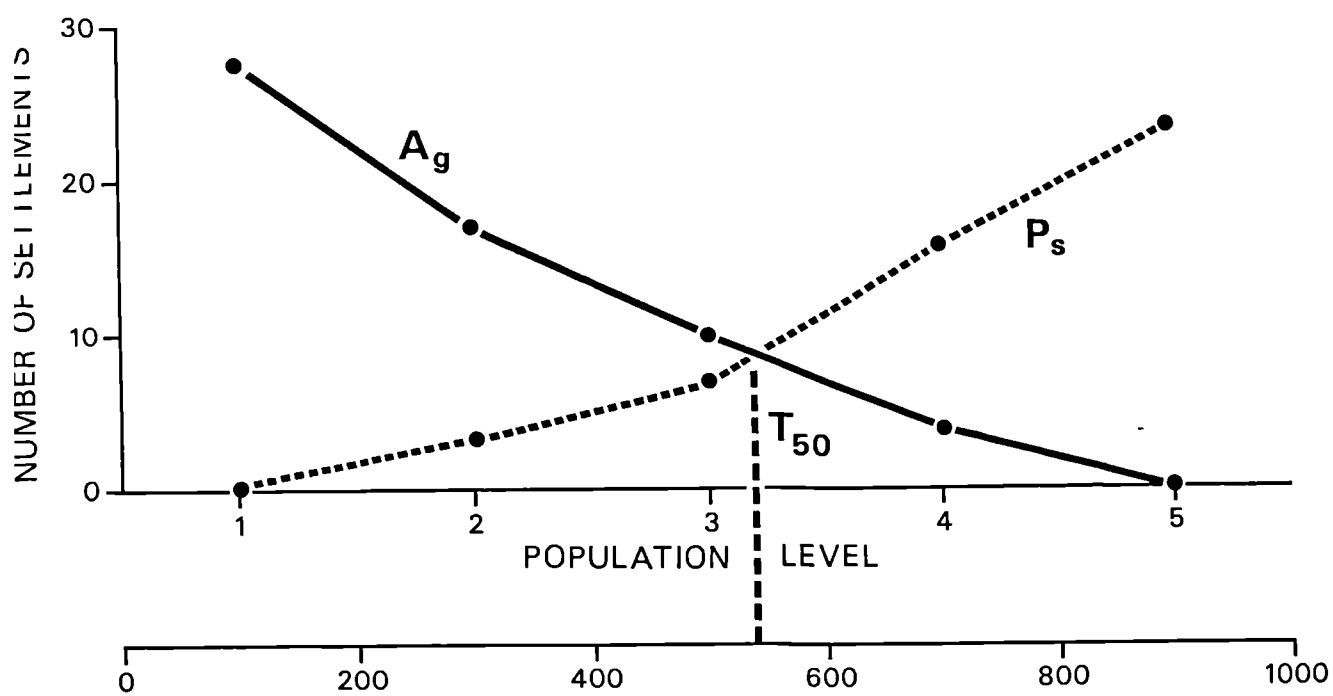


Fig.12.1 Reed-Muench Graphic Method of Plotting Threshold Levels of Function

Source: Haggett and Gunawardena, 1964

12.2.3 Proposed Services and Facilities for Groups of Small Towns

By referring to potential factors of small towns for development (chapter 11) and population threshold (table 12.2), particular services and facilities may be suggested for implementation in the groups of small towns (see table 12.3). The rural markets groups A and B are considered as important centres for encouraging commercial and small industrial sectors, particularly those intended primarily or agro-industrial activities. The main objectives of the development of these activities are:

- * To estimate the local resource particularly in the agricultural sector.
- * To increase the income of the rural population.
- * To improve training and industrial skills.
- * To improve rural markets.
- * To provide opportunities for work in the non-agricultural sector.
- * To reduce rural-urban migration.
- * To extend the urbanization level.

Obviously, the evidence at present shows an urban-rural polarization in the province, creating a great disparity between the urban and rural areas with a rapid decline in agriculture. So, providing the necessary services in these towns would be a crucial step in improving and transforming the rural economy by estimating and commercializing the agricultural sector. Rondinelli and Ruddle (1978, p178) referred to the role of markets in development:

Historically, in most of the developed world, rural investments have clustered around markets. But if markets are to serve as growth points in developing nations, they must perform a wide range of functions and offer a variety of services and commodities. ... As the number of trading, manufacturing and service industries grow in one centre, there is a strong probability both that total demand for all services and products will grow and that the market's service area will expand.

Moreover, the development of these marketing centres would increase the frequency of rural visits as well as speed the coming of innovation and transformation which in fact will lead gradually to the extension of the level of urbanization. This extension will contribute to the development of the backward rural areas, which unfortunately have no access to the large urban centres. Eighmy (1972, p300) noted this possibility when he wrote:

An increase in the central place functions of markets is a material manifestation of raising expectation and a greater diffusion of information which are so characteristic of developing areas today.

Therefore, the development of agro-industrial activities in rural markets requires the provision of these towns of supporting social and infrastructural services such as health, education, roads, water, and electricity supplies.

The purposes of developing a third group of towns (c) which have a high potential for agricultural development are:

1. To increase agricultural production.
2. To support the agro-industry by promoting agricultural materials.

3. To increase farmers' incomes.
4. To keep the rural population working in the agricultural sector.

The services and facilities that should be provided for these towns are:

1. Facilities that are needed for stimulating and increasing agricultural production such as cooperatives offering seeds, fertilizers, pest control, storage, tools, etc.
2. Basic services that raise the quality of life such as water and electricity supply, health, education, and municipal administrative services.
3. Transportation and communication services that link the rural areas with market centres.

The fourth group (D) includes those towns with a minimum of potential in both commercial and agricultural aspects. The objective of the development at this level would be to guarantee that no area is severely deprived of necessary services and to slow down the movement from the rural areas to urban centres. Moreover, most of the population around these towns are scattered in small settlements so that the provision of necessary social services would encourage them to become sedentary and concentrate their efforts in compact settlements as well as achieving rapid transformations of traditional life through the spread of development and information to the rural

small villages. Misra (1972, p159) noted this possibility when he wrote:

A long-term objective of service centres will be to create channels through which urban influences can penetrate the remote parts of the countries. The service centres would attract local talent to start an urbanization process by way of diversifying the occupational base and starting a different style of life.

Table 12.3 Proposed Services and Facilities for Groups of Small Towns

Category of Towns	Potential for Development	Proposed Services
Rural market centres (groups A and B)	Commercial and agricultural factors favourable	Hospital, municipality departments, agricultural and water departments, commerce office, industrial office, commercial bank, labour and social affairs office, fire station, agricultural co-operative, housing estate office, secondary schools, transport office, youth centre, community development centre, library, court, electricity power office, telephone service, vocational training centre, travel agency, post office, hotel, sports facilities.
Small rural centres (group C)	Agricultural factors favourable	Village cluster centre, farmers' service centre, agricultural co-operative, storage facilities, health centre grade 3 or 4, secondary schools, transportation services, small post office, community development centre, sports facilities, water and electricity supply, telephone services, court.
Local service centre (group D)	Minimum commercial and agricultural factors favourable	Branch of village cluster centre, health centre grade 2 or 3, small post office, telephone service, community development centre, sports facilities, transportation improvement, small court, water and electricity supplies.

The necessary services that should be located in these towns are those that belong to the social infrastructure services such as water and electricity supply, health, education, post offices, transportation, and municipality services.

The services and facilities that have been suggested to be located in small towns would have important objectives. First, Jizan province is characterized as a rural backward area with a level of distribution of services and facilities below the national average. Therefore the services suggested above would bring the province closer to the national average. For example, providing small towns with secondary schools will reduce the ratio from 22,000 to 15,000 inhabitants per school. Moreover, establishing small hospitals in larger rural market centres would also reduce the ratio from 46,000 to 33,000 persons per hospital. Indeed these services will not only reduce the wide gap between the province and the rest of the country, but also between the urban and rural areas within the province.

Second, these services will strengthen the lower levels of urban hierarchy. Obviously the majority of the population still live in rural areas with a low level of agricultural production and a low standard of living. This situation requires the extension of the urban hierarchy, by developing the small towns as rural service centres. The national development plans have adopted the concept of urban hierarchy, but in the area studied, the lower levels of the urban system have not been adequately developed. So, the concept of small towns can fill the gap of the lower levels of urban hierarchy and so link the larger urban centres with rural settlements. The

higher order of small towns would act as rural market centres, while the lower order of small towns would act as local service centres and would act as satellite centres for the higher order of small towns.

Obviously, the area studied includes 927 villages with an average of about 400 persons per village. Indeed, improving the spatial distribution of small towns would bring the urban hierarchy of the province to one capital centre, 36 urban service centres, and 927 villages which means that there would be 1 town for every 25 villages. This ratio would enable the rural population to receive adequate services and facilities from rural service centres. Moreover, the provision of services within the lower levels of urban hierarchy will also reduce the distance that separates villages from the few existing urban centres. Table 12.4 shows that 33.3 per cent of villages are at distances of between 1 and 5 km, and 45.5 per cent of villages lie between 6 and 10 km from service centres. This means that 78.8 per cent of villages are at distances of less than 10 km. Table 9.11 (chapter 9) shows that only 27.5 per cent of the total villages are at distances of less than 10 km from the larger urban centres of Sabya, Abu Arish, Sametah, Baish, and Fayfa.

It might therefore be noted that locating proper services in appropriate places would help in opening up the backward rural areas by bringing services closer to the rural population. Moreover, the provision of services in small towns based on their development potential would create a better pattern of socio-economic interaction which in turn would lead to an integration of settlement systems in the future.

Table 12.4 Distance of Villages from Service Centres after the Inclusion of Small Towns

Distance in km	No. of Villages	%	Cumulative %
1 - 5	309	33.3	33.3
6 - 10	422	45.5	78.8
11 - 15	123	13.3	92.1
16 - 20	49	5.3	97.4
> 20	24	2.6	100
	927	100	-

Sources: Derived from villages survey 1983, and Jizan topographical map sheets 1:50,000

However, a consideration of the interrelationship between the role of small towns and rural development achievement requires that priority should be given to road development, because the effects of the development services largely depend on the degree of accessibility to them. Wilson (1973, p218) accordingly pointed out that:

The implication is that the greater the accessibility or openness and the more people directly influenced by the facility, the greater the probability of development, so long as costs of transport are substantially reduced.

Unfortunately, at present, the levels of connectivity of network and road density (as discussed in chapter 6) are very low in the province. Clearly, there are a few paved roads leading from larger urban centres to a limited number of larger rural centres. These roads are generally not interconnected, and as a result, many rural centres are not included in the network.

Therefore, a well-developed network system may be justly regarded as the first sector to be developed in order to encourage small towns to achieve their successful operation in rural development. In this respect, four levels of roads are suggested to serve the rural population. These roads are hierarchically distributed in the province (see fig.12.2). The primary type is concerned with major roads which connect the larger urban centres with rural markets. These roads would play a vital role not only in increasing urbanization in rural areas, but also in improving the market system which is characterized by weekly meetings. The role of development roads in upgrading the market system from periodic to daily has been noted by Hodder and Roger (1974, p143) in fig.12.3). This change is largely dependent on improved accessibility, with the change from primitive roads to higher capacity roads. This change would improve the role of rural markets so that they will be able to provide the necessary inputs for agricultural productivity and to increase the commercial and industrial activities in rural areas.

It is proposed that a system of secondary roads should connect local services centres (group C of small towns, i.e. those towns which have a high potential for agricultural development) with markets. This type of road would help farmers to bring their produce to markets within a satisfactory distance and suitably brief period of time. A third category of roads should link the small local service centres (group D of small towns) with markets. Finally, the fourth type of roads are feeder roads, i.e. branches from the above categories linking the rural villages with markets and urban areas.

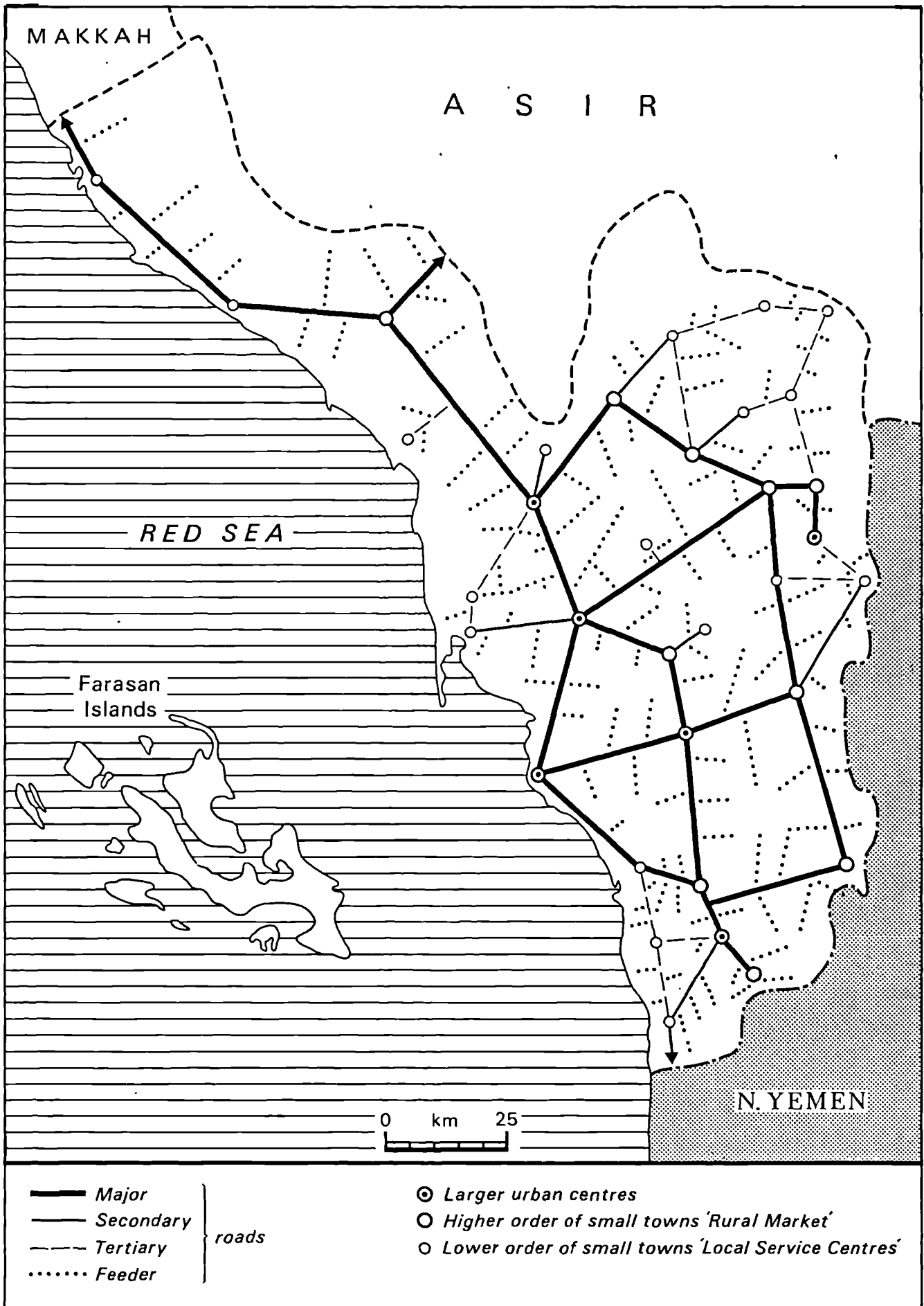
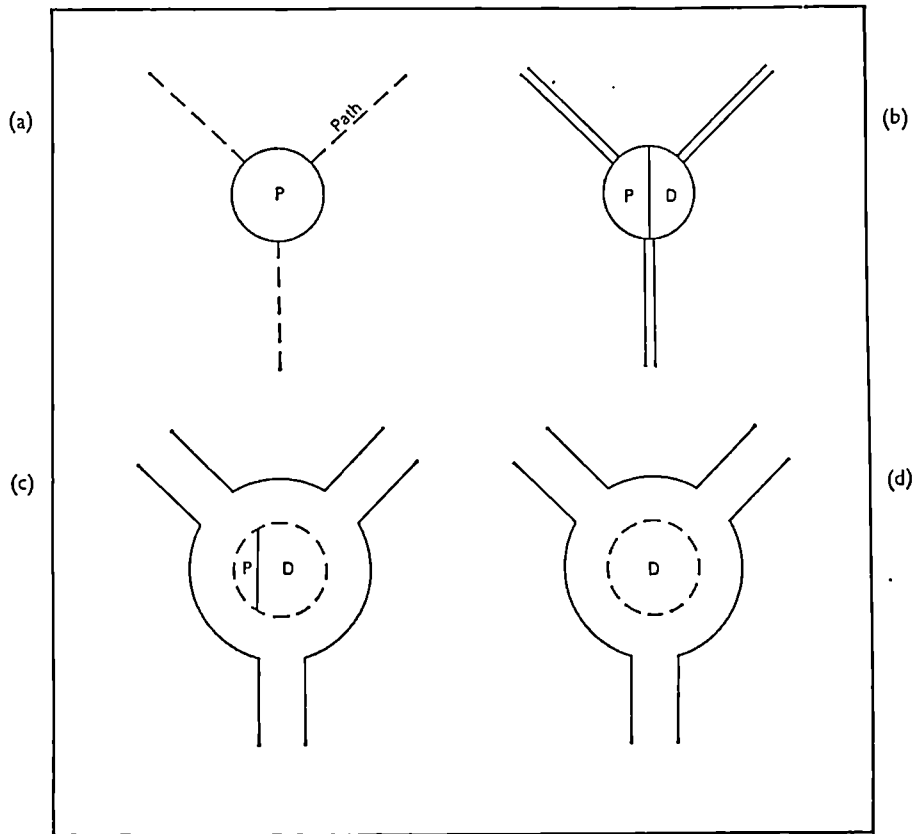


Fig.12.2 Settlement Hierarchy and Proposed Road Network System



. 12.3

Association between the roads development system and the shift of market system from periodic (P) to daily market:(D)

Source: Hodder, W. and Roger, L. 1974.

It might therefore be concluded that these proposed patterns of roads would break the isolation of remote rural areas in terms of creating better accessibility to services and urban areas, as well as increase the connectivity index and road density in the province.

12.3 Programmes Development Implementation

In the first part of this chapter, the services and facilities that are needed in rural areas were determined. Here, the implementation policy of these services will be taken up. Indeed, the policy of small towns for rural development is largely dependent on successful implementation programmes. This is not in fact the responsibility of one or two ministries, but of several ministries and departments, as the organization and participation of the administrative structure from national through regional and local levels is crucial for rural planning and development. Moreover, the encouragement of the private sector would bring greater participation in various activities in rural areas. The following analysis will discuss the role of the government administrative structure as well as the private sector, and their participation in planning.

12.3.1 The Role of Government

The development plans of Saudi Arabia are now actively providing development programmes in all the regions, in order to stimulate regional growth as well as to reduce the regional and urban-rural gap. However, these objectives require a decentralization of power and functions with effective co-ordination,

communication, and information systems from national to local administrative levels. Mathur (1986, p7) points out that:

the whole purpose of development is being redefined so as to bring people right onto the centre stage. This basic change in the meaning of development has further added new dimensions to the administrative task.

Therefore, the efficiency of the administrative systems must play a crucial role in providing the development services offered by government offices.

There are three levels of administration responsible for the provision and organization of the services that are needed in rural areas: national administration, regional administration, and local administration (see fig.12.4).

12.3.1.1 The Role of National Administration

This level is concerned with national planning according to a top-down strategy. It is co-ordinated by the Ministry of Municipality and Rural Affairs (MOMRA) and the Ministry of Planning (MOP). Town planning and rural affairs fall under the responsibility of the MOMRA while the MOP is responsible for providing the National Development Plan. In previous development plans, attention was drawn to the settlement policy, a which has been associated with larger urban centres as important foci of development. In chapter three, the urban settlement hierarchy provided by the Third and Fourth Development Plans was discussed.

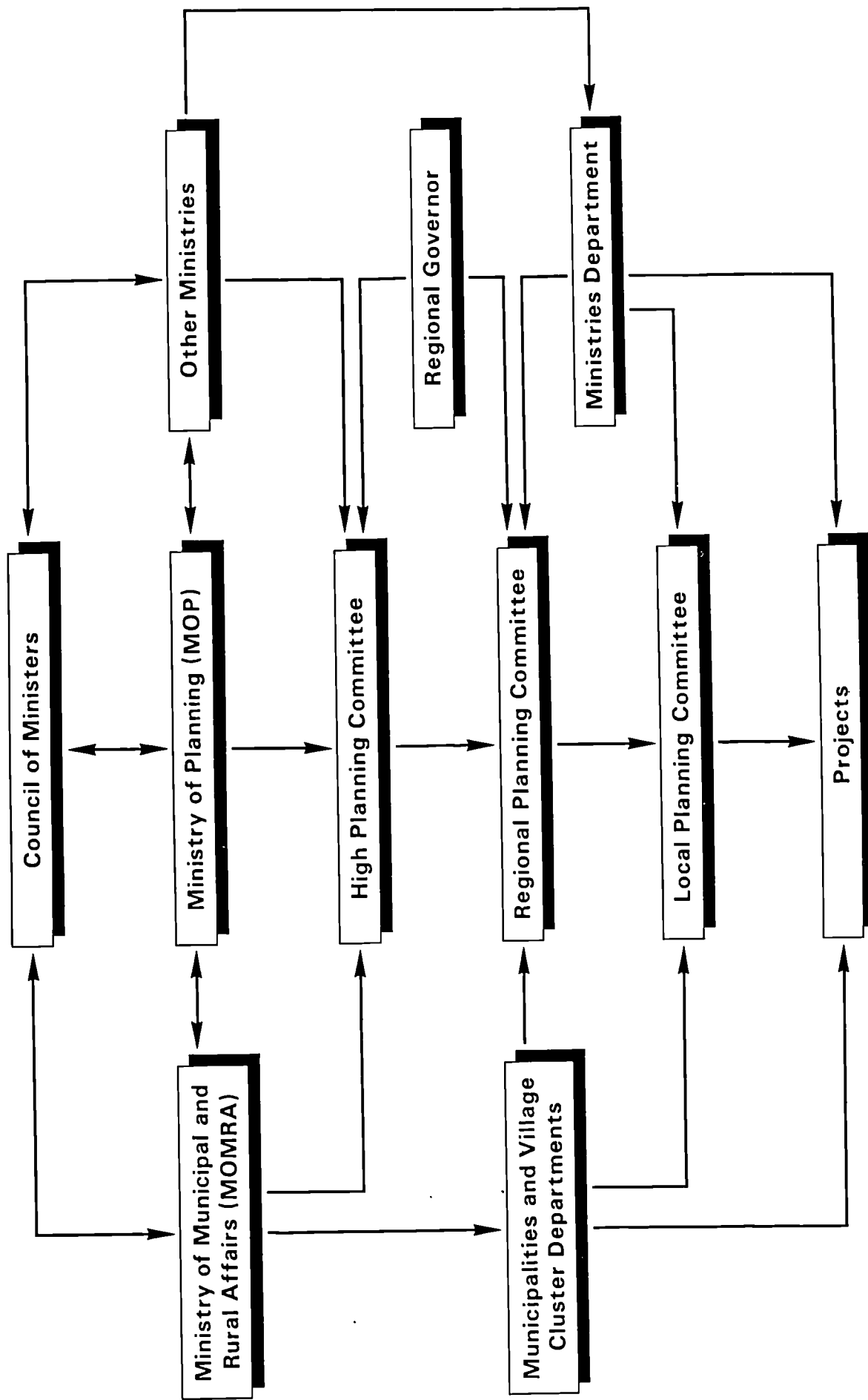


Fig.12.4 Proposed Administrative Structure for Coordinating Rural Development

Unfortunately, these development urban centres formed by national planning have failed to influence policy implementation or to guide development towards the goals of reducing the gap between the regions as well as between urban and rural areas, particularly in Jizan province. In this area, two levels of urban hierarchy have emerged: Jizan town as a regional centre, and five surrounding towns (Sabya, Abu Arish, Sametah, Baish, and Fayfa) as district urban centres. Clearly, these two urban levels have not resolved the rural problems where the majority of the population live in villages and small towns, so that many difficulties remain, including poverty, rural migration, and inequality of services.

Therefore, initiative directed at making a significant contribution to rural development should be taken urgently. Recognition of the role of the lower levels of urban hierarchy is suggested as a vital approach for rural development. This policy should be supported by national planning in two parts.

First, the settlement hierarchy should be extended to include the roles of small towns, particularly those associated with traditional weekly markets, because the existing urban levels are inadequate to carry the development process to rural areas. The aim of development plans is to reduce the gap between urban and rural areas. This aim can be achieved in Jizan province, when special attention has been given to the role of small towns as instruments for effecting regional economic growth and reducing the interregional disparities. Dewar (1986, p146) emphasized this policy when he wrote:

It is believed that rural productivity will be raised if urban centres, and thus markets, are made accessible and that peasants can be induced to produce more by exposure to goods and services available in urban centres, since these affect motivation to earn more.

The extension of settlement hierarchy is the responsibility of the MOP together with the MOMRA.

The second issue concerned with national planning is the decentralization of decision making. Lower levels of urban hierarchy would be effective in terms of provision of services and opportunities for rural transformation if the regional and local levels of planning were granted free decision-making power.

Rondinelli and Ruddle (1978, p176) argue that:

Developing nations need additional planning capacity in order to implement rural development, but not just more planning for the sake of planning. They need planning that balances centralized control with decentralized participation, a process that focuses on local conditions, needs, and patterns of human behaviour, combining appropriate and multiple levels of analysis, linked directly to implementation.

Clearly, rural development planning needs strong support from the national planning committee by transferring the administrative functions from the ministries to their branches in the province in order to achieve a meaningful comprehensive development in rural areas and to create opportunities for regional and local planning to participate, guide and co-ordinate development in the province.

12.3.1.2 The Role of Regional Administration

This level is directly responsible for rural development in order to bring the province to the goals of the national plans. It is very crucial as the link between the national planning level and local planning level. Indeed, the performance of small towns as instruments of policy for rural development involved strong support from regional government. So, the authority at this level should play a significant role in implementing a regional strategy for rural improvement and development.

Therefore, as the policy of small towns involves the implementation in these towns of development programmes, all the ministries should take action in this matter. The MOMRA is responsible for the provision of physical facilities and planning for both urban and rural areas. Sanitation is the most neglected problem in rural areas, so that such matters as sewage disposal and waste collection require urgent attention. Indeed, improving these services would have an immediate positive effect on health and hygiene levels in rural areas. Therefore the provision of local municipalities and village cluster centres will lead to planning in the rural areas and the tackling of these major problems. The Ministry of Transport is responsible for the construction and provision of roads. This ministry, together with MOMRA, should provide a suitable road system in the province which, as we have noted above, is the principal component for the distribution and improving of other facilities. Obviously agriculture is the major sector in the province so the rural development system should give

high priority to programmes and services required for agricultural development.

Clearly, these services are not all the responsibility of one department, but involve a multiplicity of departments, each one being responsible for providing its own particular service to farmers in a co-ordinated manner. However, the Ministry of Agriculture and Water with the Saudi Agriculture Bank (SAB) through their provincial branches are together responsible for the provision of the following direct services to farmers:

- * Services seeking to augment agricultural production, such as credit, seeds, fertilizer, pesticides, farm equipment, and tractor hire services.
- * Programmes and services stimulating behavioural changes in farmers, such as technical preparation, assistance, supervision, research, guidance and planning.
- * Programmes and services regarding marketing functions, such as storage, packing, processing, co-operation, information and transport.

The responsibility for a clean water supply is jointly undertaken by the Ministry of Agriculture and Water and the MORA. In rural areas, there is a direct link between diseases and contaminated drinking-water. So, schemes for the treatment and distribution of drinking-water are urgently required in the rural areas.

The role of the Ministry of Health is to provide health facilities including hospitals, health centres, malaria and bilharzia treatment stations. This ministry, working with the Ministry of Education, can provide programmes for hygiene instruction in rural areas through the schools and health centres.

The Ministry of Education and the Presidency of Girls' Education are responsible for the provision of education services in both boys' and girls' schools, particularly secondary schools. Adult education is also important in rural areas in order to reduce the illiteracy ratio as well as to make the rural population more productive.

The role of the Ministry of Industry and Electricity include the provision of an electricity service. Unfortunately, the majority of villages are still not connected to an electric power system. This ministry is also responsible for the development of industrial activities in the rural areas. The evidence shows that most of the industrial establishments are concentrated in large urban centres. Industrial activities should be encouraged in rural areas in order to increase rural productivity and to create employment opportunities. The provision of industrial loans, electric power, experience, and road networks are necessary to improve this sector.

The Ministry of Commerce would guide the development in the commercial sector together with the Ministry of Industry and Electricity and the MORA. Commercial activities could be improved through the development of rural markets as centres for the non-

agricultural activities.

The Ministry of Labour and Social Affairs is responsible for the development of social services. Most of the social services, such as social security, community, professional training, child care, help for elderly and handicapped people, are unfortunately not available in rural areas. The policy of small towns would resolve these problems in more deprived areas.

The Ministry of Telecommunications is responsible for providing telephone, postal, and telegraph services. The Ministry of Hajj and Waqf is responsible for providing religious services, such as mosques and Eid prayer sites.

Youth welfare must provide the services relating to sports facilities, libraries, and entertainment facilities. The Ministry of the Interior should provide the services of public security, fire stations, traffic police, and civilian affairs offices.

The Ministry of Finance and National Economy is responsible for annual budgetary resources, which are important for the implementation of development programmes. It is also responsible for the provision of housing funds in order to improve the rural housing which is presently of a very poor quality. Moreover, this ministry, through the Department of Central Statistics, is responsible for data collection and the publication of statistics which are basic needs for planning.

It is suggested that MOMRA should guide and co-ordinate the provision of services and facilities in the province. Moreover, a regional development committee needs to keep contact with the provincial governor as the head of the province and the representative of the regional committee to the higher planning committee (see fig.12.4).

Unfortunately, in the absence of adequate regional development planning, the administration of rural development programmes is still highly centralized at the national level. This situation has resulted in two problems. First, there is a high concentration of decision-making in Riyadh where the ministries are located. Second, there is insufficient co-ordination and co-operation between ministerial departments in terms of the provision of services and facilities. Clearly, every department works individually according to a separate policy. This individual work results in small returns and scanty achievement of development objectives.

In fact, establishing a regional development committee would help to resolve these problems by organizing activities in such a way as to ensure a high degree of co-ordination between government offices without duplication of effort. However, in order to achieve an effective organization and sufficient provision of services, facilities, and infrastructural development, the regional committee should be provided with sufficient powers and flexibility of decision-making at the regional levels, because centralization of planning and decision-making by central ministries has limited the acceleration of the development process in the province.

Unfortunately, the regional departments of ministries have at present no real decision-making power in implementing development programmes until they receive authorization from the central ministries. For example, the simple problem of repairing damage in a water supply system entails having to write for permission to proceed with the repair to the Ministry of Agriculture and Water in Riyadh. This process usually results in months of delay before authorization is sent back to the province. Evidently, this high concentration of decision-making responsibility significantly delays and halts the provision of services.

Therefore, regional advancement requires the transfer of decision-making power concerning development from the ministries to the regional and local planning committees. Rondinelli (1983, p134) argued the same when he wrote:

By decentralizing development functions to the field offices of ministries, or to subordinate levels of administration, more public servants can become knowledgeable and sensitive to local problems and needs because they will be working at the level where these are most visible and pressing. Closer contact between local populations and government officials could also allow the latter to obtain better information with which to formulate plans and programs than could be obtained in the national capital.

Rondinelli and Ruddle (1978, p121) also emphasize the role of decentralization of decision-making for rural development in developing countries:

Experience with rural development planning ... indicates that, to be effective, it must be directly related to functional activities and to decision-making processes;

the stronger the relationship of planning to implementation, the more likely plans are to be relevant and realistic. Since rural development is essentially a site-bound activity, planning can most easily be linked with implementation at the regional level.

Therefore, the advantages of regional decentralization of decision-making would lead to the following objectives:

- * A speeding up of the provision of services that should be distributed quickly, such as water, electricity supply, and other basic services.
- * The creation of a significant degree of co-ordination between the administrative departments.
- * A high degree of linkage between regional development committees and local development committees in order to achieve an effective implementation of development proposals.
- * The creation of a variety of analyses which are essential for regional and national development aims.
- * Many opportunities for participation in programmes necessary for planning.
- * A bringing to the fore of the areas which have a high degree of potential for development. Action may then be taken to provide the services and facilities necessary to promote the potential of those areas.

Indeed, a much greater degree of decentralization in decision making would positively enable small towns to perform their new role in bringing about further changes in economic and social conditions in the rural areas.

12.3.1.3 The Role of Local Administration

This level of authority is at the bottom of the scale in administrative hierarchy planning. It should play a crucial role in linking the regional planning committee with local communities. The policy for small towns is largely dependent on the participation of this level in rural development planning. The local authorities with tribal leaders (shuyukh) could play a significant role in the provision of lands and in the flexible application of the various development projects.

Unfortunately, many development projects, such as those relating to schools and electricity supply, usually face the problem of availability of land. The local administrative level would be responsible for resolving this problem. Moreover, this level is also responsible for encouraging the services and facilities that relate to agricultural development, such as marketing, feeder roads, and extension services. This level would pass the services that are needed in rural areas to the regional planning committee, because they have greater knowledge about local conditions and what the rural population needs.

In fact, the main problem facing local administration in the

lack of qualified manpower necessary to carry through the planning process to rural areas. Some administrative training seems called for to relieve this situation. Indeed, training programmes for local authorities would not only expand administrative capacity at the local level, but would also engender a knowledge of local conditions and needs, which would help to smooth the implementation of development programmes.

12.3.2 The Role of the Private Sector

This sector could participate to a significant degree in the development of rural areas through the policy of developing small towns. Obviously, this sector is very active in the country and its size and structure comprise a wide range of commercial establishments from the many one-man businesses to some very powerful and diverse multi-national operations.

There are three elements in government policy which have had a major influence on the private sector's pattern of growth. These are:

1. The commitment to provide the country with a comprehensive, efficient, and modern economic and social infrastructure.
2. The commitment to make widespread the distribution of the benefits of development among the people as a whole.
3. The policy of diversification intended to reduce the economy's

dependence on the oil sector by developing a strong domestic capability in the producing sectors. (Fourth Plan, p102)

The policy of small towns can open the door for the private sector to participate in:

1. Increasing the opportunities for new jobs.
2. Encouraging greater investments in agriculture, commerce and industry.
3. Formulating and implementing training programmes.
4. Further studies of investment and marketing opportunities as well as feasibility studies of projects that may guarantee high returns.

However, the private sector cannot become involved in rural development strategy unless basic services such as road provision and electricity supply, (which are the responsibility of government departments) are developed. Moreover, the regional planning committee and local authorities could play an important role in encouraging businessmen to participate in rural development through commercial investments.

12.4 Conclusion

In this chapter, the services and facilities that are necessary to promote rural planning and development through the policy of small

towns have been suggested. However, from the point of view of the role played by small towns in rural development, the government role is the significant part behind the operation. Government support is spread over the responsibility of the administrative hierarchy levels: national, regional, and local.

The national level is responsible for the national plan that brings together the problems of urban and rural areas. The national planning level would be responsible to extend the urban settlement hierarchy to include the bottom levels where the majority of the population live. Moreover, this level is also responsible for the provision of services and facilities that are needed in rural areas through the ministries' regional departments.

However, rural development depends to a large extent on the participation of regional planning. This level is crucial for planning as a link between national and local levels. In addition, the responsibilities of this level must extend to a comprehensive programme for co-ordination between the various departments. To make this level more effective and to speed up the development process, a decentralization of decision-making is required. The local level is also important as a link between local communities and regional planning committees. It is also responsible for the smooth provision of services.

It should further be recognized that the success of administration in rural planning would encourage the private sector to participate in and contribute to rural development policy.

Chapter 13

Overall Conclusions

The study has addressed two major aims: first, to present the basic problems that confront rural areas both in economic growth and social development of the rural communities; and second, to offer an approach for rural planning and development based on a settlement policy that will allow the majority of rural residents to obtain increased benefits from the development process. The study focuses on the role and capacity of small towns as instruments for rural development in terms of the provision of services, facilities, and economic activities.

Unfortunately, the spatial structure of development, not only in Saudi Arabia but also in most developing countries, shows a serious conflict between urban and rural areas. Until recently, development planning strategies have been concerned more with urban than with rural problems. Evidence shows that larger urban centres have received the lion's share of master plans and development processes, whilst the rural areas where the masses of the population live and work have been neglected or only marginally developed.

Obviously, the modern transition in the economy of Saudi Arabia has resulted in wide disparities and conflicts between the rural traditional sector which is related to agriculture, and the modern urban sector which is related to the oil industry and its related activities. Consequently, the wide gap between the two sectors has had

a major effect on the spatial structure of growth and development as well as on demographic and social patterns. In this respect, there is a visible polarization in terms of disparities in economic and social conditions not only between the regions of the country, but also between urban and rural areas within the regions.

Evidence shows that the eastern, central, and western regions (particularly their larger urban centres) have emerged as core regions with a high level of urbanization and concentration of economic and social activities. On the other hand, the southern and northern regions (particularly the southern region) are still characterized as peripheral rural regions with low levels of urbanization and industrial investment.

Jizan is one of the southern region's provinces, and the most remote and backward rural area in terms of national growth (i.e. urban growth), and industrial centres where the development process obtained an earlier start. The area is obviously distinguished by its rural character and the low level of urbanization, as the majority of the population (approximately 70 per cent) live in small rural settlements. According to the village survey undertaken in 1983, there were 927 villages in the province, about 64 per cent of which had less than 500 inhabitants. The area is divided into three parts, i.e. the plains, hilly, and mountainous areas. The middle part of the plains area shows a high density of population and compact settlement, while the hilly and mountain areas are characterized by low levels of population density and semi-compact or dispersed settlements. This is determined by the availability of natural resources for agriculture and the

concentration of communication facilities, as well as social and economic services in urban centres which are located in the middle part of the plains area, rather than being dispersed throughout the rest of the rural areas of the province.

Agriculture is the foundation of the economy of the people in the province which has extensive natural resources, but agricultural processes are very traditional and amount only to subsistence farming for the few primary products of sorghum and millet. Most of the agricultural implements are very traditional. For example, the wooden hoe, sickle, and stick are the main local implements used in agricultural activity. Consequently, farmers still have low levels of productivity, poor investment, and inadequate physical infrastructure and services to sustain activities. Therefore, this sector has not so far played any significant part in the economic development of the province in general, nor of rural areas in particular. This weakness may be due to various factors such as low levels of technology, provision of physical and infrastructural services, capital, skilled workers, agricultural extension services, market systems, and inefficient land arrangements.

Moreover, the rural areas are not only suffering from the problems of a lack of agricultural development, but they also have major problems in the provision of social services that are needed for improving the living standards of the rural population. These problems are apparent in the inadequate provision of services where they exist and in their complete absence in larger rural areas. The study indicated that the rural settlements are poorly off with respect to

road provision, quality of housing, drinking water, electricity, waste collection, community services, and inadequate distribution of health and education services, particularly in the provision of hospitals and intermediate and secondary schools.

This inadequate provision of economic and social services has resulted in the tendency for significant numbers of the rural population to migrate from the farmlands to urban areas, particularly to the larger urban centres of the middle belt regions (eastern, central, and western), where there are increasingly high levels of urbanization and better paid as well as greater opportunities for labour. Unfortunately, the phenomenon of rural migration has a major effect not only on the structure of agricultural activity, but also on the stability of the rural society, since most of the migrants are the young who are the most productive people.

The national development plans have recognized the wide disparities between the regions and between urban and rural areas. The regional development policy has been launched during the Third and Fourth Development plans (1980-1990) in order to reduce the gap between regions and urban and rural areas. This policy is concerned with urban settlement hierarchy. Three levels of urban development centres have been identified: national, regional, and district.

With regard to Jizan province, the urban structure consists of the provincial town of Jizan as the largest urban centre, and five other urban centres (Sabya, Abu Arish, Sametah, Baish, and Fayfa) as secondary large urban centres. According to the urban settlement

hierarchy envisaged in the national plans, Jizan town comes at the regional level, and other urban centres are considered as district levels.

Clearly, these two levels of urban hierarchy in the province are associated with settlements of more than 5,000 inhabitants. Moreover, most of these urban centres are concentrated in the middle part of the plains area. That means that the rural settlements below this figure, and distributed in remote rural areas, have been ignored or left relatively untouched by the development process.

Obviously, the concentration of investments and facilities in a few urban centres has failed to resolve the rural problems. Most of the rural population of Jizan province live in small, scattered villages with inadequate provision of transport facilities with the result that they have limited access to the urban services. The study shows that more than 50 per cent of the rural settlements are at distances of more than 20 km from urban service centres.

Indeed, the direction of development policies which have been concerned with a few larger urban centres has resulted in a widening of the gap between urban and rural areas in terms of incomes, wealth, and productive opportunities, rather than in diminishing the rural problems. It can be seen that the government administration and commercial activities are the core around which the functions of urban centres are built. So, these urban centres have very little impact on the development of the agricultural sector which is indeed the major activity of the rural population.

Rural development strategies must break down the urban polarization, in order to integrate urban and rural areas and to stimulate agricultural development, particularly in rural areas where the population are scattered in small villages and hamlets with limited access to productive and social services. Rondinelli and Ruddle (1978, p19) argue that:

A hierarchy of cities and towns functionally linked with agricultural production areas provides a decentralized network of development centres that can increase access of large segments of the population to economic, social and political opportunities as well as to urban services and facilities.

Unfortunately, the lower level of urban hierarchy in the province has been found to be poorly structured and overlooked in development proposals. So, its contribution to rural development is still weak. Clearly, the lack of functional hierarchy for lower urban centres has resulted in a failure to stimulate the major agricultural sector. The study shows that the majority of farmers are outside the cash economy, because they lack incentives and access to markets and services that if accessible would stimulate the commercial value of agriculture, and increase their production of supplies for marketing. The rural areas indeed possess a high potential in terms of natural resources for agricultural development, but this potential alone is not enough to generate a fundamental transformation by commercializing the rural economy and raising the quality of rural life. Rural development requires a variety of investments and services to be made available to the rural population.

Therefore, it has been suggested that a settlement policy based

on an extension of the urban hierarchy and intended to increase the number and improve the spatial distribution of small towns which could act as rural service centres, would constitute a new approach for rural development. The principal objectives of this policy can be summarized as follows:

1. Small towns would be rural service centres for agricultural development by providing the services and technology that are necessary to stimulate and commercialize this sector.
2. They would maximize the rural accessibility of the economy, of social, infrastructural services that are prerequisites to raising the standard of living in rural areas and to keeping the rural population in their settlements.
3. An attempt to improve the rural marketing system by changing the weekly market system to a daily market system, which would constitute an extension of the urban system.
4. The policy of small towns would stem the tide of rural-urban migration (presently the major rural problem) by creating opportunities of work in non-agricultural activities.
5. They would be centres for the provision of information and diffusion of innovation, which are essential for the rural transformation from traditional to modern life.
6. They would integrate the ^{rural} settlements into the urban system

in the province and overall into the urban system in the country.

7. They would act as centres in which to establish the local planning committees where the appropriate policies for development programmes and services can be formulated and recommended according to the potential and priority of the rural areas.

Since a policy of small towns is suggested as a means of filling the gap at the lower level of urban hierarchy, it is important to note that not all the small towns have the same potential for provision of programmes and services. The study has attempted to classify these towns according to their potential in rural development. The classification of towns is based on a combination of different development potential factors, such as the quality of their hinterland for agricultural development, the population to be served by the centres, their accessibility, and their function as central places. The Factor Analysis method has been used to group these towns on the basis of 13 variables.

The results of the analysis indicate that there are two factors controlling the potential of small towns, i.e. commercial and agricultural factors. So, according to these two factors, small towns have been classified into four groups:

1. Towns with high potential for both commerce and agriculture.
2. Towns with significant potential for commerce rather than for

agriculture.

3. Towns with a positive potential in agriculture but low potential in commerce.
4. Towns with a minimal potential for either commerce or agriculture.

The above classification could serve as a useful guide in terms of the provision of services and facilities in rural areas. The first and second groups of towns have been assigned as important rural markets, which should be provided with programmes and services that would stimulate commerce and small-scale industrial activities, particularly those intended primarily to increase agricultural production. Moreover, the potential of these marketing centres would lead to a concentration of financial input, for example via branches of development banks located in these centres rather than dispersed in smaller rural centres. This indeed would encourage the function of these small towns as urban centres and centres for non-agricultural activities.

Group three, i.e. those with high potential in agriculture, should be provided with services and facilities needed by farmers to increase their agricultural production. These towns would act as local service centres, and the development objective of these towns would be to make rural farmers capable of producing surpluses for marketing and to keep these farmers working in the agricultural sector. The fourth group, i.e. those towns with minimal potential in commerce and

agriculture, should be developed as small local service centres in order to provide the basic services and facilities to the rural population living in scattered small villages. Thereby an attempt will be made to guarantee that all the rural areas are provided with the necessary services.

However, the success of this proposal of small towns as a tool for rural development is largely dependent on the participation of administrators at all levels, from national, through regional, and down to local planning committees. Without this support, the function of small towns will remain limited. Indeed, more effective co-ordination between the planning committees and free decision-making powers at regional and local levels would significantly contribute to the success of the small towns policy in fulfilling their new role.

It may be concluded that the aim of national development plans is to reduce the wide disparities between urban and rural areas by bringing economic activities and social welfare services to remote rural areas. The lower level of urban hierarchy that is associated with small towns and their potential would provide a further step in the development strategy for Jizan province. Through this policy, access in rural areas to the development services, where at present the demand exceeds supply, will be increased and rural development objectives will be achieved.

APPENDIX AQuestionnaire for the Survey of Villages

- * Name of the sub-emirate.
- * Village name.
- * Topographical location: Plains Hilly High Mountains
- * What is your main job?
 - 1. Agriculture 2. Government job 3. Trade 4. Stock Raising
 - 5. Fishing 6. Other (specify)
- * What is your monthly income?
- * If agriculture is your main job, which crops do you cultivate?
 - 1. 2. 3. 4. 5. 6. 7. 8.
- * Do you sell some of these crops? Yes No
- * If yes, which of these crops do you sell?
 - 1. 2. 3. 4. 5. 6. 7. 8.
- * To which market do you sell your agricultural produce?
 - 1. Rural weekly market 2. Urban market
- * How do you convey your produce to market?
 - 1. By car 2. By animal 3. Other (specify)
- * Do you use fertilizers? Yes No
- * If yes, where do you buy them?
- * If no, can you give reasons:
 - 1. 2. 3. 4. 5.
- * Do you have a tractor? Yes No
- * Have you benefited from agricultural services? Yes No
- * If yes, how many times per month?
- * If no, please give reasons:
 - 1. 2. 3. 4. 5. 6.

- * What irrigation system do you use?
1. Flooding 2. Wells 3. Rainfall
- * Who works on your farm?
1. Your family 2. Other workers 3. Both
- * How many holding areas do you have?
- * How many holding areas do you cultivate now?
- * Have you abandoned some of your cultivated areas?
- * If yes, please give reasons:
1. 2. 3. 4. 5.
- * Did you get an agricultural loan? Yes No
- * If not, can you give reasons:
1. 2. 3. 4. 5.
- * How much is your annual income from agriculture?
- * How often did you visit Jizan town during the last month?
1. Daily 2. Weekly 3. Every two weeks 4. Monthly
5. More than these
- * How often did you visit the nearest urban centre during the last month?
1. Daily 2. Weekly 3. Every two weeks 4. Monthly
5. More than these
- * What was the purpose of your visit?
1. For work 2. Buying and selling 3. For government services
4. Other (specify)
- * What kind of transport do you use?
1. Private car 2. Taxi 3. With friend 4. Other (specify)
- * What is the type of your house?
1. Hut 2. Block 3. Concrete
- * How many rooms are there in the house?
- * Did you get a housing loan? Yes No

* If not, please give reasons:

1. 2. 3. 4. 5.

* How do you obtain your drinking water?

Resource	Distance
----------	----------

1. Tap	
2. Well	
3. Tanker	
4. Other (specify)	

* What kind of road connects the village with the nearest service centre?

1. Paved road 2. Earth road 3. Rock road

* Is your house connected to the power grid? Yes No

* If not, do you use a special generator? Yes No

* Is your house served by a waste collection scheme provided by municipalities and village cluster centres? Yes No

* If yes, how often do they collect the waste?

1. Daily 2. Weekly 3. Every two weeks

4. More often than these

* How do you dispose of your sewerage?

1. By pit latrine 2. Other (specify)

* Where do you go for the following services:

Service	Location	Distance (km)
---------	----------	---------------

Primary boys' school		
Primary girls' school		
Intermediate boys' school		
Intermediate girls' school		
Secondary boys' school		
Secondary girls' school		
Hospital		
Dispensary		
Post Office		

Telephone
 Fire service
 Municipality and village
 cluster centre services
 Agricultural services
 Social security services
 Police services
 Agricultural Bank
 Civil affairs office

* Do some members of the family work outside the village and come back every day? Yes No

* If yes, where do they go?

1. 2. 3. 4.

* Do some members of the family work outside the province? YesNo

* If yes, where do they live?

1. 2. 3. 4. 5. 6. 7. 8.

* What are the main problems facing life in the villages?

1. 2. 3.
 4. 5. 6.
 7. 8. 9.
 10. 11. 12.

APPENDIX BSurvey of Small Towns

- * Name of the emirate
- * Name of the town
- * Topographical location:
 1. Plains
 2. Hilly
 3. High mountains
- * Type of road connecting the town:
 1. Major paved road
 2. Secondary paved road
 3. Earth road
 4. Rock road
- * Market system of the town:
 1. Daily market with one important daily market per week
 2. Half-day market with one important day market per week
 3. Early morning market
 4. Only shops
- * Distance of market from nearest urban centre
- * Total number of commercial shops
- * Total number of industrial shops
- * Government services
 - Educational Services
 1. Secondary schools
 2. Intermediate schools
 3. Elementary schools
 - Health Services
 1. Hospital
 2. Health centre grade 4
 3. Health centre grade 3
 4. Health centre grade 2
 5. Health centre grade 1
 - Administrative Services
 1. Emirate office
 2. Police office

3. Court
4. Village cluster centre
5. Agricultural service office

- Social Services

1. Post office
2. Telephone
3. Social security office
4. Civil affairs office

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