UNIVERSITY OF SOUTHAMPTON

FACULITY OF SCIENCE

GEOGRAPHY

REGIONAL DEVELOPMENT PLANNING IN SAUDI ARABIA: AN EVALUATION OF PUBLIC SERVICE PROVISION IN ASIR REGION

by

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A thesis submitted for the degree of

Doctor of Philosophy

October 1988

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ABSTRACT

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REGIONAL DEVELOPMENT PLANNING IN SAUDI ARABIA: AN EVALUATION OF PUBLIC SERVICE PROVISION IN ASIR REGION

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Since the early 1970s, Saudi Arabia has made considerable progress in developing the physical and socio-economic infrastructure of the Kingdom. The provision of public services has been expanded rapidly. However, with a strongly centralized planning system the regional dimension in planning has been insufficiently considered. Regional and rural-urban imbalances have increased. Rural areas have benefitted far less from economic development or the provision of basic services.

This study examines and evaluates public service provision within the context of regional development problems in Asir Province, one of the lagging regions in Saudi Arabia. It focusses mainly on three areas of public provision: education, health and municipal facilities. It looks at the progress and problems of the provision of those services at the regional scale (Asir Province), and the subregional scale (Sarat Abidah Subregion). Asir is a well settled area of predominantly village population, as is the subregion which was selected for more detailed study on the basis of extensive field studies and questionnaire surveys.

The study shows that the provision of educational and health facilities, which have undergone vast expansion in recent years, still leaves many communities with inadequate access to those services, particularly in the more nomadic areas. Municipal facilities appear to have been less successful in reaching out to rural areas.

On the basis of detailed analysis of services and their use in the subregion the study attempts to provide a development approach based on the elaboration of a hierarchy of central places to guide the future provision of public services and facilities. The same approach might be adopted elsewhere in Saudi Arabia. The study also points out some broader lessons learnt from the study which may help improve public service development in Saudi Arabia.

ACKNOWLEDGEMENTS

I would like to express my thanks, appreciation and gratitude to many people and institutions who have helped during the production of this thesis. Without their assistance, cooperation, understanding and encouragement this study would never have been completed.

I am deeply grateful to my supervisor, Dr. B. P. Birch, for the continuous help and guidance he has given me from the beginning to the end of my study. He spent much time and effort, and even travelled two weeks in the research area to help and guide my fieldwork. I am also very thankful to Dr. D. A. Pinder for the assistance, ideas and encouragement he provided. Thanks are due to Dr. J. A. Milne for his help with the computing work and Mr. A. S. Burn and the cartographic staff for their assistance in inking the numerous maps for this research.

During my research trips to Saudi Arabia valuable assistance has been given to me by numerous government officials and individuals. In this regard I would like to express my thanks to the officials whom I met and interviewed in the Ministry of Planning, Health, Education, Municipal and Rural Affairs, Transportation, the General Presidency for Girls' Education, the Central Department of Statistics and other government agencies and departments in Riyadh and the branch offices of these ministries in the Asir region. In particular I would like to thank all government officials in the Asir region and the subregion of Sarat Abidah for their valuable assistance, discussions and the information given to me. I am sincerely grateful to all school headmasters and headmistresses, health centre physicians, village leaders, villagers and others in the subregion of Sarat Abidah whom were very kind and provided valuable assistance.

I would like to thank the King Saud University, Riyadh, for providing me with the scholarship enabling me to pursue my studies in the UK. It also provided transportation and all expenses for the fieldwork.

Finally, I owe a great debt of gratitude to my parents and brothers for their continual support and encouragement. But, most of all I am greatly indebted and grateful to my wife, Hadba, who has offered patience and encouragement throughout the span of this study.

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PART ONE

CHAPTER ONE

INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

Major changes have occurred in the socio-economic conditions in Saudi Arabia since the discovery of oil in 1938. The massive increases in government oil revenues, particularly in the last two decades, have allowed for rapid growth in the social and physical infrastructure of the Kingdom. More services and facilities became available to the people, particularly in the towns, but the rural areas benefitted less. As a newly created Kingdom occupying a vast and lightly settled area, the government adopted a strongly centralized development planning system to manage the very rapid development of the social, physical and economic infrastructure of the country. But not all parts of the country are the same in terms of their population densities, settlement patterns and economic base, or in terms of their needs, so that increasingly it has been seen that a greater regional component is needed in the development planning, to reduce urban-rural and other imbalances.

The provision of basic public services like education, health and other similar facilities have become important aspects of social, cultural and economic change in the Kingdom, and ones where a regional planning component is important to ensure the services meet the needs of local people. Until the 1960s the development of education, health and welfare services was very slow due to the lack of a basic infrastructure for development, a lack of trained personnel, the absence of experience in providing such services, and the sheer scale of the problems. However, since 1970 and with the launching of the First five-year

national development plan, very ambitious plans for vastly expanding the network of public services were launched. One of the basic feature of the plans for public services is that the services should be made available by the government to all of the population free of charge. The Second development plan (1975-80), for example, stated that:

> "Social services will be developed to ensure that every group and individual, however disadvantaged, enjoys an adequate, dignified minimum standard of living. Realizing this goal, the government intends to expand and intensify its programmes to provide free education at all levels and create a clean and healthy environment with adequate medical facilities available free of charge." (p.5).

Widespread educational opportunities and health services were seen as the two principal means of achieving national development, because they are basic to the well-being of the population. Or as the High Committee For Educational Policy put it:

> "Manpower is considered by the state as the springhoard to the utilization of all its other resources. The state considers the development of this power, through education and cultivation, the basis for general development." (The Educational Policy, 1970, Article, 229)

While the implementation of the five year national development plans, of which the fourth is currently being implemented, have speeded economic and social development across many aspects of Saudi society, there is no doubt that regional and rural-urban imbalances have increased with this development. Some regions with large urban centres, such as the Central, Western and Eastern regions, have developed much more rapidly, than primarily rural regions. Rural areas like the Southern and Northern regions have benefitted far less from economic development or the provision of social services. This is inspite of the fact that the Northern and Southern regions contain more than 30 percent of the country's population. While a more balanced

regional development has been increasingly recognized as an objective in the national development policy to deal with these regional imbalances, little progress has been made in reducing those imbalances.

This lack of emphasis in dealing with regional needs is the result of several factors in Saudi Arabia. First, nearly all contemporary studies of Saudi Arabia have been concerned with national development, and the social and economic changes that have occurred nationally as a result of the large increase in oil revenues. Little study has been made of imbalance and the maldistribution of public services and the need for regional development in Saudi Arabia. Rural aspects of development, in particular, in Saudi Arabia have been widely ignored by researchers, even though more than 46 percent of the Kingdom's population lives in rural areas in more than 10,000 villages.

Secondly, while there have been clear statements of commitment by the Saudi government to spread the benefits of the nation's oil wealth among all sectors of its population, less has been done to ensure that the rural areas fully share in this development. The Southern and Northern regions, in particular, have inadequate access to education, health, municipal services and many other basic services compared with other regions. Rural development in Saudi Arabia has recently gained more attention, particularly since 1980 with the launching of the Third development plan (1980-85), but there remains no clear policy for rural development. All national development plans are formulated on a strongly centralized sectoral basis in terms of goals, policies and programmes with no distinction between rural and urban aspects of development. None of the national development plans have introduced separate policies to deal with the special problems of the rural areas.

Third, a lack of attention to the needs of rural areas has been common in development and development planning worldwide so that Saudi planners could not readily learn from other countries. The review of the literature in the next chapter reveals that rural areas worldwide generally are more poorly provided with public services than urban areas. That is to be expected in view of the greater problems and costs of providing services to rural populations. However, it can be argued that successful national planning requires a more balanced distribution of social and physical infrastructure among all sectors of population. This balance should at least be achievable in a region like Asir, the subject of this thesis, where rural population densities are high.

That a better level of service provision has not been achieved in all parts of Saudi Arabia is often because the government ministries responsible for the provision of public services have not developed explicit policies on the level of services that should be provided in settlements of different sizes. The provision of facilities in rural areas has often been based in the past on a mixture of common sense and local political pressure rather than on clearly defined policies and needs. It is the contention of the writer that with the widespread provision of services now beginning to appear in rural areas like Asir, a more clearly defined set of policies is essential to ensure that the provision is wisely applied.

In view of the clear evidence of a lack of an explicit and consistent national policy for development on a regional basis and of regional imbalance and maldistribution of social facilities and services, this study sets out to investigate the problem of planning for service provision in the Asir region of Saudi Arabia and to focus on three areas

of public provision: education, health and municipal facilities. The study looks at the problems of the provision of those services at two scales, first at the provincial scale, for which some official data is available, and second at the subregional scale. Asir is a well settled province of predominantly village populations, as is the one small part selected for more detailed study on the basis of the author's own field studies, so that both are suitable for the analysis and evaluation of service provision.

1.2 STUDY OBJECTIVES

In order to explore and gain a better understanding of the problems of rural service provision within the context of regional development problems and government policies and programmes in the development of a predominantly rural region, the main objectives of this research are:

1) To review and analyze national development planning in Saudi Arabia and its weakness at the regional level.
2) To analyze the growth of the three types of public services and facilities in Asir region in relation to the settlement and population pattern.
3) To analyze and evaluate the pattern of use of those public services in one subregion of Asir and to evaluate the effectiveness of the locational pattern of those services.
4) On the basis of this examination to propose some further development of central places as an approach to the planning for such services in similar rural areas.

1.3 THE STUDY AREA: ASIR REGION AND SARAT ABIDAH SUBREGION

The author's familiarity with the study region goes back to his childhood. He also had his early education there and his family still lives there. His research interest in the region dates from the early 1980s when he used Asir as a case study for several essays he wrote for his BA in Geography at the King Saud University in Riyadh. This initial attention, together with frequent recent visits and travel throughout the region, allowed him to observe its general development problems at the time of its most rapid socio-economic transformation.

The province of Asir is located in southwest Saudi Arabia to the north of the border with North Yemen (Fig.1.1). The region covers about 80,000 square km which represents about 4 percent of the area of the whole Kingdom. The western part of the province comes close to the Red Sea coast but is separated from the sea by Jizan province, while to the north are the Provinces of Makkah, Al Bahah and Riyadh. To the east, apart from the small lightly-populated Najran province, Asir borders on the vast desertic Empty Quarter which has no more than a thin scatter of nomadic people.

Although well populated compared with adjacent areas, Asir remains a little developed region. This was one of the main reasons for selecting Asir for this study because it offers the opportunity to examine the problems of rural development. Asir has remained generally marginal to the national development process because of its large number of small rural communities which have been difficult to develop with necessary facilities and services. Asir has no large towns.

According to the most recent census taken in Saudi

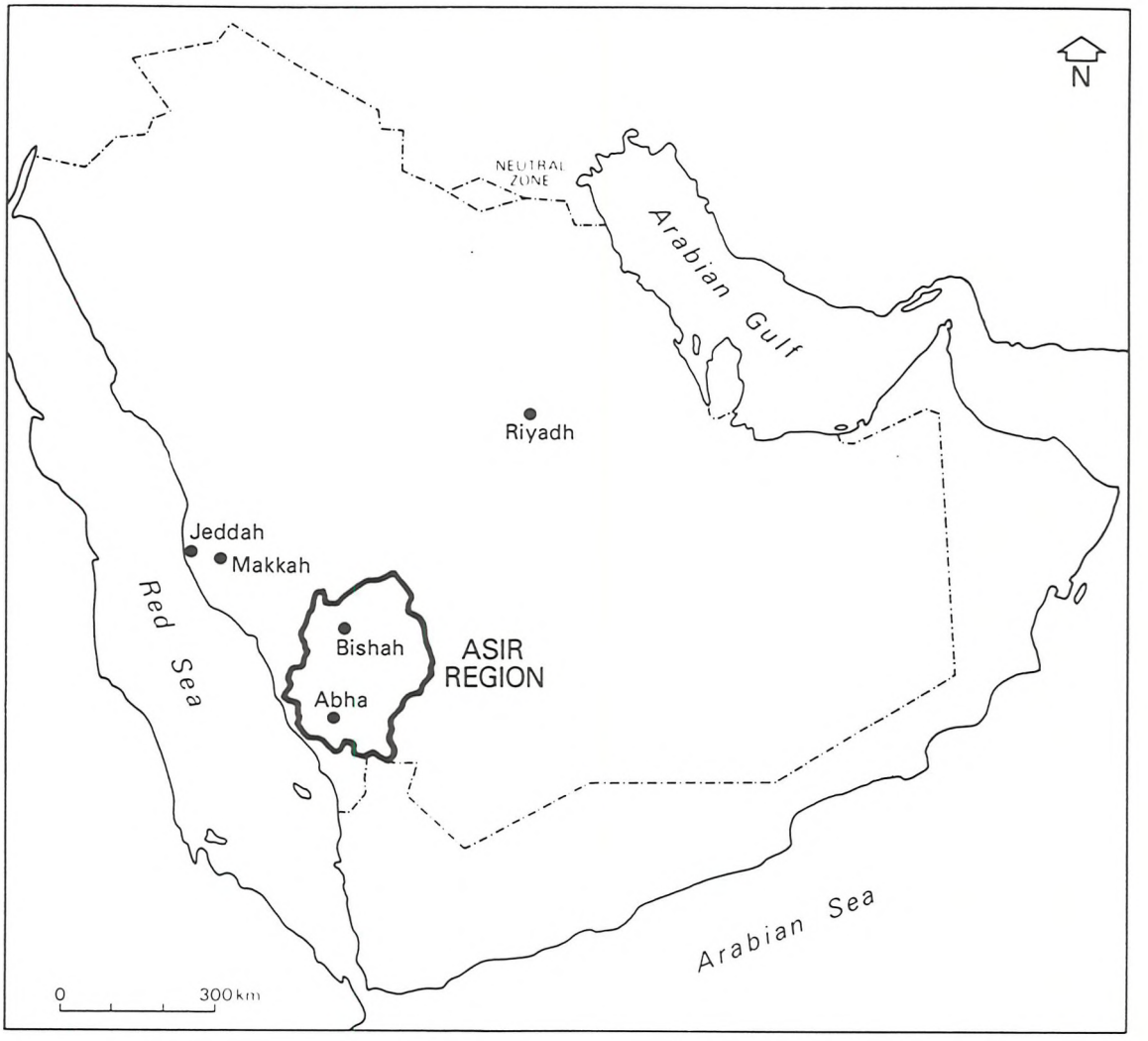


Figure 1.1 Location map of Asir Region

Arabia, Asir had a total population of 678,679 in 1974, or 10.5 percent of the Kingdom's population. It is a rapidly expanding population. The Asir Emirate office estimated the region's total population at 1,085,203 in 1983, a 60 percent rise on the 1974 figure. Asir is one of the more densely settled part of the Kingdom but one of the predominantly rural character. The 1974 census showed that about 85 percent of Asir's population was rural, either village or nomadic. The 1983 Asir Emirate study showed that there were 4,007 villages and hamlets in the province with a total population of about 785,000, 72 percent of the region's population.

While development in Asir has lagged behind that in other parts of the Kingdom, there has been rapid progress in the provision of some basic socio-economic services in recent years. Large numbers of schools have been opened, particularly at the elementary level and for boys. Health services have been introduced widely but with an emphasis on the provision of local clinics, dispensaries and health points rather than hospitals. Because of the rural nature of most of Asir's population, the provision of municipal services and other physical infrastructure has been limited and almost entirely confined to the few towns within the region. The region's road system remains skeletal. Because Asir lagged behind more urban parts of the Kingdom in its development much of the development which has occurred has happened very recently. Indeed much is still to happen. For example, more than two thirds of the boys' schools now in operation were only established since 1975. More than half of the girls' schools have opened since 1980. With so much development having occurred so recently, but with little systematic planning for it, there is a need to trace out these recent processes of transformation of Asirian society

as a basis on which further service provision could be more effectively planned for.

There has been virtually no study of service provision in Asir. In fact, the scarcity of contemporary studies of Asir and of its development problems was another important inducement for undertaking this study. Government sponsored studies are also limited. One reason for this scarcity of previous study is that the administrative units within the region have not been properly identified. Different authorities have used different divisions. Few records are available for population and other characteristics of these administrative units. Until 1983 no list and map of villages in Asir existed. Lack of basic data of this type has hindered the planning and development of the region, and has also made proper planning for its infrastructure difficult. The dispersed nature of much of the settlement and population in Asir and the limited road network have had an impact on the delivery of public services to such a large number of settlements. These issues have largely been neglected by the ministries responsible for the provision of various services.

The lack of reliable data on Asir, which has hindered the development of the region, also suggested to the writer that he should attempt to study the problems of service provision in more detail in one part of the region. For this reason he chose to look at the Sarat Abidah subregion in the south of Asir as a case study area for more detailed analysis and evaluation of service provision. This part of the study is based entirely on his own extensive fieldwork investigations.

The subregion of Sarat Abidah was only defined in 1983 as a separate administrative and planning subregion by the Asir Emirate, the Ministry of Municipal and Rural Affairs

and the Ministry of Planning so that official data on it is sparse. Fig. 1.2 shows that the subregion lies in the south of the Asir, and is bounded on the south by the Dhahran Aljanub part of Asir and Jizan province. On the north lie the areas of Khamis Mushayt and Tathlith subregions. To the west is Abha subregion, while the dry eastern part of Sarat Abidah borders Najran province. The Sarat Abidah subregion covers approximately 10,000 square km which represents about 12.5 percent of the whole area of Asir province.

The selection of the Sarat Abidah subregion was governed by two main factors. First, because Sarat Abidah is the author's home area it made effective field survey possible. His knowledge of the area eased travel to the many villages in the area and made it possible to meet officials involved with rural services. Visits to most parts of the area were necessary not only to conduct interviews and questionnaires and establish the location of schools, clinics and other services, but also to complete settlement maps, since the published maps are often of poor reliability in terms of settlement location and the road network, much of which is very recent.

The second main reason for choosing to conduct a case study of services in Sarat Abidah subregion is because, in many ways, it is a microcosm of Asir and reflects the essential diversity of the whole region. The Sarat Abidah area contains part of the more densely populated mountain zone of Asir where most of the more prosperous farm villages and more services are found. The subregion also includes part of the nomadicly populated Tihama with its oppressive climate and terrain, lower population density, lower living standards, and its greater remoteness and poorer service provision. In many ways the Tihama is not only the most backward part of Asir but also of the whole Kingdom. The

Figure 1.2 The location of the subregion of Sarat Abidah

case study area also includes in its northern and northeastern parts another dry zone of nomadic settlement which is characteristic of all eastern Asir. In this area, as in the Tihama, there have been recent government attempts to settle the nomads at permanent locations in order to raise their low living standards, but the provision of services in these areas is still poor compared with the main mountain settlement zone.

An estimation of the subregion's population in 1983, gave it just over 100,000 inhabitants, or about 9.2 percent of Asir's population, but it now stands at about 118,000. The main activity of its population in the more densely settled mountain zone is agriculture with nomadic pastoralism in the Tihama and dry northeast. The dominant rurality of the area is its most impressive characteristic. The main "town" is Sarat Abidah after which the subregion is named. It only had a population of about 3,500 in 1983, but already acts as a subregional centre. Below this centre in the settlement hierarchy are large numbers of villages and hamlets ranging in size from a few families in the smallest hamlets up to several hundred people in the large farm villages. 80 percent of the subregion's population are found in over 400 villages mainly scattered across the mountain zone.

1.4 STUDY DATA

The extreme scantiness of economic, demographic, social, and fiscal data on Saudi Arabia, particularly at the regional and subregional levels at which this study has been conducted, has been a major problem throughout. The most recent national population census conducted in Saudi Arabia was in 1974. Although there have been major changes in the population and its socio-economic structure, only a few

estimates of population have been made since then. Data on services and the economy are often presented only at the national level and are usually very general, out of date, and subject to great errors, even when they are available at all. The writer found that government officials are unable to release much information because it is confidential. Virtually no data is available on the cost of providing basic services and the relative cost of these services in different parts of the country. The planned outlays for new developments are not available at the regional and subregional levels. Where official data on planned development at the regional level is available it is difficult to use because each government agency makes its own administrative divisions of the country.

In order to overcome this lack of data availability, the author used various techniques to collect his own data, especially in the case study area. These included questionnaires to villagers; the completion of lists of services; interviews with national and local government officials, teachers, doctors and others with local knowledge. It was decided at an early stage to limit the study of rural service provision to the three aspects of education, health services and municipal services to better focus the diverse information obtainable in this way. These are the three areas which have seen most rapid expansion in recent years in Asir region and in the case study area. Because all three involve bringing services close to the rural people, it has also enabled the writer to conduct field studies of how those services are located and used in the case study area.

The study involved several extended fieldwork periods in Saudi Arabia, especially in Riyadh and Asir, to find out what types of data was available and to undertake fieldwork.

An early reconnaissance visit of five weeks' duration was made to Saudi Arabia three months after first registering in Southampton University in October 1984. During this period of fieldwork visits were made to a number of government ministries in Riyadh and their provincial branches in Asir region. Discussions were held with those government officials on the most useful approaches to follow. Some data was also collected from government sources to help define the area and the services to be studied.

A second two month field visit was made during June-July 1985 to obtain data from various ministries and government departments in Riyadh and Asir on infrastructure development in Asir. For this purpose the first three weeks were spent in Riyadh in the Ministries of Planning, Health, Education, Municipal and Rural Affairs, Transportation, the General Presidency For Girls' Education, the Central Department of Statistics and others government agencies and departments. This was followed by similar visits to the branch offices of these ministries in the Asir region. Trips to various parts of the Asir region were made to examine the patterns of settlements and services. During this tour around Asir discussions and interviews were also conducted with local people in various parts to learn more about the level of services provided and development problems.

After the analysis of the data obtained from the previous two visits had showed that only rather broadscale conclusions were forthcoming, it seemed appropriate to select a case study area within Asir where a more detailed approach could be followed. This would require gaining data through extensive fieldwork because of the paucity of even the most basic data at the subregional level. An extensive fieldwork programme mainly in the subregion of Sarat Abidah was carried out during the three months from November-

January 1986-87. This fieldwork was focused around the following issues:

1) The evolution of the patterns of public services.
2) The present distribution of services in Sarat Abidah subregion in relation to the settlement and population pattern.
3) The catchment areas and local use of services and the increased accessibility of the people to services as a result of the expanding road system.
4) The effectiveness of the public services provision and the planning process for new public services.

In order to examine the provision of education services, 64 of the 77 boys' elementary schools in the subregion, and all of the 37 girls' primary schools were visited to gather data on the number of students, teachers, the catchment areas and similar information by means of interviews with the headmasters and the headmistresses of each school (See Appendix A). All of the intermediate and secondary schools for both sexes were also visited for the same type of information. This was necessary because this information was not available in the central administrative offices for education in Sarat Abidah or Abha, the provincial capital.

A short and uncomplicated questionnaire was distributed to all 706 students of the secondary schools and teacher training institutes in the subregion to establish the school catchments, the travel patterns of those students and other data (See Appendix B). 515 students responded to the questionnaires to give a 73 percent response rate. 191 students who did not respond included all the 89 girls in the teacher training institute in Sarat Abidah town as well as 102 boys (20 percent of the total secondary school boys) in the subregion's five secondary schools. The author received no reason from the girls' teacher training

institute about the rejection of this questionnaire and could not enter the institute to pursue the matter. The main reason why 20 percent of the boys did not respond to the questionnaire was because many of them were absent on trips away from the school at the time of the writer's visit to conduct the survey. The writer also made several visits to the local educational offices in Sarat Abidah for additional information.

A similar technique was used to collect information about the provision of health services in Sarat Abidah subregion because no complete central record of health care use was available. All of the 23 primary health care centres in the subregion were visited and the head of each health centre was interviewed to get information about the catchment areas of the health centres, about staff levels, facilities, equipment, supplies and other data (See Appendix C).

While health centre staff could indicate the villages their centres served, they had no detailed data on their patients' home areas, their frequency of visits, modes of travel and similar information. To obtain more information on these points, sample surveys were conducted at all of the health centres. While many relevant questions could have been asked of patients about their use of health centres, it was felt that a short and simple questionnaire was necessary because the villagers, most of whom are illiterate, would have been suspicious of a long, complicated questionnaire, and would be unwilling to give personal opinions on the quality of health services and the reasons for their visit. Therefore, the questionnaire only included five questions which asked the home village of the interviewee, the frequency of visits, the distance travelled to the health centre, the means of transport, and the types of road used

to get to the health centre (See Appendix D). Because of the time a patient survey on this scale would take the writer to conduct, the writer obtained the help of the duty physicians. Questionnaires were left with the physician at each health centre to complete a questionnaire for each of the first 50 patients he saw in the week following the author's visit to the health centres in December 1986. In this way questionnaires were completed for 1137 patients at the 23 health centres, an average of about 50 patients per centre. This sample represented about 14 percent of health centre patients visits in an average week in the subregion. These 1137 patients also came from 254 (62 percent) of the 407 villages in the subregion of Sarat Abidah. Since some villages, especially in the Tihama, are still remote from health centres the coverage of villages by this questionnaire appears quite good.

A much smaller questionnaire survey and field count to collect data on the types and distribution of retail services across the subregion of Sarat Abidah were conducted. A sample 64 storekeepers in the main retail service centres of Sarat Abidah town and Alharajah were interviewed to assess the motivation of traders who chose to set up their stores in these centres and to see to what extent those two places have been perceived as subregional centres by the traders there (See Appendix E).

Interviews were also conducted with officials of the local authorities to see how planning decisions to fund and site new schools, health centres and other basic services are currently made, and to obtain other specific information related to the provision and problems of public services. Major local government officials in Sarat Abidah in the Boys' Education Office, the Girls' Education Office, Sarat Abidah Municipality, Alharajah Village Cluster, and the

subregion's Emirates offices were interviewed. Other interviews were also conducted in Abha with officials in the General Directorate of Boys' Education, the General Directorate of Girls' Education, the Asir Emirate Office, the General Directorate of Health Affairs, and the General Directorate of Municipal and Rural Affairs.

Discussions and interviews were also conducted with some community leaders and many villagers during the visits made to many villages and service outlets in the Sarat Abidah subregion as well as in other parts of Asir region. A great deal of information about the needs for services and facilities was gained from these mainly informal meetings while the writer also learned much of villagers' attitudes towards the types of services available to them and the planning for them.

These extensive visits were also made to check on the location of different services and facilities and to correct the limited information already available to the writer on the published maps of the area. In fact this published material on the settlement pattern was so limited that, to a large extent, the writer had to construct a base map of settlements and services as he went along.

A final check on some of the data obtained on earlier visits in the study area was made in a last field visit during January-February 1988. Opportunity was also taken on this visit to collect some further data on service provision nationally. Visits were made to various government ministries and departments in Riyadh and Asir, and around Sarat Abidah area. In particular this last visit to Sarat Abidah was used to update information on newly provided services and recent changes in the local road system.

The selection of any one particular theoretical model, from the range developed in Western geographical literature,

to provide a framework for this study was very difficult because of limitations of the data and the nature of the study area, and because almost nothing was known of the area before the present study. A review of the relevant literature on rural service provision reveals that at the present time, even in the developed world, there is no single general theory which can be used to describe and evaluate the provision of public services in predominatly rural regions, or to plan for the provision of new facilities. However, the author has used various techniques to help analyse and evaluate the present settlement pattern and the systems of public service provision in his area. In particular the SPSS X computer programme was found helpful in analysing the sample questionnaires and with frequency cross-tabulations. The chi-square test was used to develop some of the research findings. Adopting an existing model or devising a new one based on a single set of criteria or formulae is even more difficult for a region where so little is still known of its population distribution, their welfare needs and how the present services are used. As a result the more basic conclusions of this study focus on a revision of the hierarchy of service centres in the case study area. This could be applicable to other parts of Saudi Arabia.

1.5 ORGANIZATION OF THE STUDY

In order to achieve the broad objectives of the study it is organized in three parts with thirteen chapters. The first part consists of three chapters, including the present which provides a statement of the problem, the main objectives of this research, an outline of the study areas, and the data collection methods. Chapter two discusses some of the literature on development planning for public service

provision in rural areas. It considers rural planning studies in developed and developing countries, and outlines theoretical models of rural service provision. It also reviews all written sources which the author could locate on Asir region in either Arabic or English.

Chapter three is concerned with development planning in Saudi Arabia, and briefly outlines the regional divisions of the Kingdom and the social and economic structure of the Kingdom's five planning regions. It attempts to review how planning organization, policy and structure have evolved there, an aspect of Saudi development that is not well documented. The chapter also highlights the weaknesses of the development planning system from the point of view of planning for regional development. The imbalance in regional development is analyzed in terms of the unequal distribution of public service provision across the country.

Part two of this study is concerned with the development of public service provision in Asir, one of the lagging regions, to provide a context for the detailed case study of Sarat Abidah subregion. The Asir region with its large rural population is a distinctive part of Saudi Arabia and as a province is the smallest area for which one can get official published data. This data has been supplemented by much unpublished data and the writer's observation to examine the development of the region's infrastructure and services over recent decades. This material is presented in four chapters. Chapter four presents a brief review of the physical, demographic and settlement characteristics of Asir and their implications for the settlement pattern to the development of the region. Similarly chapter five outlines the region's economic activities under the headings of agriculture, industry and services, and also examines the recent development of communications which has such major

implications for the regional development of Asir and accessibility of services.

Chapters six and seven examine the development in Asir of the three public services of education, health and municipal services and facilities. In each case an attempt is made to trace the development of the particular service in various parts of the region, and to identify inequalities in the levels of provision both between different areas and different groups of the population. In particular the problems of providing education and health facilities to the same standard in areas as diverse as the well settled mountains and the sparsely settled nomadic Tihama are highlighted. The second section of chapter seven focuses on the various attempts by government agencies to develop a system of village clusters as service centres within Asir region in order to better organize municipal services for the people in those areas.

The final part of the thesis is focused on the case study of the subregion of Sarat Abidah in the south of Asir region. The sheer scale of the rural planning problems in Saudi Arabia necessitates a more detailed examination and evaluation of the infrastructure provision and needs at the subregional level. This part of the work depends entirely on primary data, much of it collected in the field by the writer. This part of the thesis consists of five chapters. Chapter eight provide the basic facts about the subregion, its physical, demographic and economic features, while chapter nine examine its settlement patterns, in terms of types and sizes of villages, their distribution and social and administrative organization, the distribution of services and evolving central places.

It is clear that some villages are evolving as central places withinthe subregion so that chapter ten deals with the

issues of retail and municipal services which tend to be clustered much more than welfare services, and therefore are more basic to the recognition of upcoming central places. The present pattern and characteristics of retail services are analyzed, and the implication of government attempts to define and extend municipality areas in the subregion are considered.

Chapter eleven examines and evaluates the provision of schools in the subregion in terms of the spatial pattern of school development, their size, status and quality and their accessibility and catchment characteristics. On this basis areas of under-provision can be identified. Similarly chapter twelve discusses and analyzes the provision of clinics and other health services, and provides empirical analysis of the levels and spatial patterns of use of these health services.

Chapter thirteen ends the study by summarizing the main findings, identifying the main gaps and obstacles to the development of rural services for Asir and the case study area. A revised pattern of central places is suggested for the Sarat Abidah subregion. A number of other measures to further improve the planning framework, which could have implications for Asir and similar areas of Saudi Arabia, are also discussed.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 INTRODUCTION

The literature on the evaluation of service provision in rural areas of Saudi Arabia is virtually non-existent. There is rather more written on this topic for other parts of the developing world, but much of it is diffuse and based on individual case studies. Concepts and theories relevant to rural service provision mainly refer to the rather different situations in developed countries and are not readily applicable to the developing areas, but this chapter reviews some of this literature in order to provide some context for what follows.

Service provision is generally at a lower level in rural than in urban areas because rural areas have lower population densities and often lower incomes than other parts of a country. For these reasons rural areas often suffer special difficulties in the provision of basic rural services, such as education and health care. The costs of providing these services, per head of population, are often, but not always, higher than in towns. Because facilities are often on a smaller scale and there is less choice from alternatives, the standards of service in rural areas may be lower than in towns.

Most developing nations adopt programmes to improve the level and quality of these rural services. This may be done in the name of equity of treatment for all the population; to promote other economic development in the lagging rural areas; to prevent discontent erupting in the rural areas; to reduce outmigration; and to improve the quality of rural life. But which public services should be subject to those

development programmes is not easy to define.

Various workers have attempted to define and group public services on various criteria and for various purposes, but none of the classifications and definitions are very satisfactory. Pokshishevskiy (1972) grouped public services into thirteen categories: health care; education; cultural facilities; retail; credit and insurance; housing; infrastructure (water and sewerage); public transport; repair shops; public administration; telecommunications, public protection (fire and police); public catering.

Lineberry (1980) has classified public services into five overlapping categories: services mainly provided by government and mainly used by the richer people (e.g. higher education and airports); services provided by government for all the population but especially for the poorer people (e.g. public health services, public housing and public transport); public services as part of the socio-economic infrastructure (e.g. water, and road networks, police and fire protection); services as life-quality determinants (e.g. recreation facilities, municipal services and public safety and protection); and public services as a public-private mix (e.g. health, education and recreation).

Hodgart (1978) broadly distinguishes three types of public facilities: those central facilities which are used by the majority of the population and the population wants them near them, such as hospitals; those facilities which people want but not near them, such as garbage incinerators and airports; and hybrid facilities which are used largely only by sections of the population and are only attractive to them (e.g. sports facilities).

Tietz (1968) suggested a more geographical division into two main types: the point-based services where the consumer travels to use them, such as retail outlets and schools, and

the network facilities, like water and electricity which are brought to the consumer. Even so some public services are a combination of these two, such as the police who operate from stations but can come to the consumer; while the network of roads or power lines in rural areas will not reach to every consumer.

What is defined as a public service partly depends on the level and form of development of society. Some of the services provided by the government in one nation would be provided by private agencies in others. Thus the most acceptable definition might be that a public service "involves things which people cannot normally provide for themselves" or through the private sector, and within these services it is often necessary to recognize those services that seem critical, or essential, to the good of that society. Thus, almost universally, critical public services would include education and health, water and electricity supplies, roads and retail outlets. But the level of provision that is regarded as "essential", for example the years of schooling, will vary from society to society. By some definitions, especially in more developed nations, public services also include public transport, sewerage and waste disposal, postal services, agricultural extension, and recreational and cultural facilities. Similarly a service that might be considered essential in an urban area, such as libraries, might not be expected in a rural area.

Some of these points are peripheral to the main problem of providing public services in rural areas, and especially in developing countries, where most effort must be put into providing a basic level of provision of the critical services. But it is also worth pointing out that many services widely used by the public involve a degree of government intervention in the form of regulation or

subsidy, even if provided by the private sector. Thus food retailers may be licensed and inspected for health purposes. This need not be the case with other non-public services provided by private agencies. Even where the government does not itself provide the service, it may apply some sort of welfare criterion to balance against actual costs and there is often some form of government regulation or subsidy to privately-run public services in rural areas in order to encourage a better pattern of provision. For example, privately-operated public transport may be subsidized in rural areas to ensure adequate services.

2.2 THEORETICAL MODELS OF PUBLIC SERVICE PROVISION

There is as yet little theory available on the best means of providing and evaluating rural public services. Some researchers, like Fisher and Rushton (1979) have noted that the level of efficiency of a public service in a rural area will appear different to the provider of the service, who is mainly concerned with the cost of the provision of the service, and the user of the service, who will be more concerned with the quality and the quantity of the service provided. What also complicates this basic conflict is that the whole of the rural population in an area may not use any one service provided and will therefore have different opinions on the need for that service. For example, not all rural dwellers will need to use the agricultural extension services provided by the government, while people in one village may not understand why services have been provided in other villages but not in theirs. Conflicts over the needs for services and the efficiency of their provision are therefore likely to arise in any attempt to evaluate services in an area.

Massam and Askew (1984) attempt to offer a systems approach to rural service provision in order to better define these conflicting forces and to better establish the bases upon which patterns of services can be evaluated. They point out, however, that their model is not intended to make the decisions for the local politicians on the best level or pattern of services needed in an area. It is merely offered as a means of evaluating the existing pattern against possible alternatives. This is only seen as the first stage of judging the effectiveness of a rural service plan and is followed by a broader evaluation of how well it meets subjective political and social objectives.

The system comprises four basic elements: the number, size and location of points where the services are provided, that is, for example, the number, size and locations of schools or clinics, together with the location and size of their catchments. Different combinations of number, size and location of a public service facility are possible in a rural area and will create different patterns on the ground. These patterns can be examined and several methods, like nearest neighbour analysis, have been employed for this purpose. By themselves the methods of point pattern analysis give little insight into the operation of the system of provision, and the pattern of the population to be served by them. Massam and Askew point out that one also needs to examine the historical, cultural, economic and political factors that helped to lead to the decisions which led to the particular patterns of schools, clinics, and other facilities that were set up. It should be noted , for example, that Lonsdale and Enyedi (1984) in their book Rural Public Services: International Comparisons focus on these more general factors and how particular rural service provision policies evolved in different countries.

Using the four elements of the system, Massam and Askew suggest that one can further evaluate an existing pattern of services provision in an area against alternative patterns that could be devised, by means of location-allocation models. Most importantly on this, one can envisage that there must be a theoretical relationship between the size and the number of facilities provided in any area to deliver a particular service to a population of a certain size. Assuming that a government agency only has a fixed budget it can choose, at one extreme, to provide a small number of large facilities in an area, or it can provide many more smaller facilities. Under the first, one has a centralised facility policy; under the second a decentralised policy. Generally the government agency will choose to go for a centralised policy because this is more likely to minimize costs, with economies of scale, and will offer a greater range of services at the few places where the facilities are located. That is, a few large clinics can offer specialist services whereas many small ones cannot for the same cost.

But if one considers total costs and convenience both to the government as the providers of the service, and the rural dwellers as the users of the service, a centralised pattern of services may be more costly and less convenient because many of the users will have to pay additional travel costs and spend more time to reach the centralised facilities. The conflict is therefore often between the government seeking to minimize its costs by centralising facilities but increasing private travel costs of users, and the rural population seeking to minimize its costs of travel by having facilities decentralised closer to it. The end result of this conflict is generally some form of compromise, or trade-off, involving a degree of decentralisation but less than the rural population wants (Parker

and Srinivasan, 1976 and Smit and Joseph, 1982).

In the resolution of this conflict, by deciding the nature of the compromise that can best be adopted, location-allocation modelling can be useful. There is by now a fairly extensive literature on the application of location-allocation modelling approaches to help determine optimal or best locations of public services in either urban or rural areas (Teitz, 1968; Scott, 1970; Revelle and Swain, 1970; Toregas and Revelle, 1972; Massam, 1974 and 1975; White, 1979; Hodgart, 1978; Rushton, McLafferly and Ghosh, 1981; Fisher and Rushton, 1979 and Ghosh and Craig, 1984). These studies assign particular levels of demand to services and determine the distance that parts of the population may have to travel to reach a facility. Distance measurements, for example between villages, can be used as a simple surrogate of travel cost or travel effort.

Models can be varied to include distance thresholds, such as by stating that no child should be more than five km from an elementary school. The magnitude of the catchment area of each facility also needs to be examined to ensure that it is of a viable size and to see if, for example, there are enough children to warrant a secondary school in the area. This leads to a study of thresholds. But the literature on location-allocation has largely been developed with respect to selected services in advanced economies. Its application requires large quantities of information not available in developing countries on how the local population uses the services to help evaluate the effectiveness of an existing pattern of services. As a result no use has been made of the method in rural Saudi Arabia and the writer's own data was insufficient to allow its application in his area.

Location-allocation models really result from a keen and

continuous interest in locational studies amongst geographers and economists attempting to explain the spatial distribution, the number, and the size of specific services within an area. There were earlier approaches. Central place theory was one of the early theories which tried to explain the spatial relationship between central places and the hinterlands needed to support them. Since Walter Christaller published his central place theory and applied it to southern Germany in 1933, several research workers have used the concept to explain the settlement structure and hierarchy of service centres in relation to their population in other parts of the world. Brush (1953) was one of the first of these where he adopted the theory for his work on southern Wisconsin, U.S.A, in the early 1950s. In recognizing a hierarchy of central places Brush used the retail and service units of centres to discriminate between three classes of service centre: hamlets with no more than nine retail and service units, villages with between ten and 49 retail and service units, and towns with at least 50 retail and service units. Brush was also keen to define the tributary areas of each centre and for this he used traffic flows because car ownership was widespread and had a crucial role in the spatial pattern of settlements and services.

Other American geographers have examined the hierarchy of central places in a way similar to Brush such as Berry and Garrison (1958) for Snohomish County, New York State. Brush and Bracey (1955) compared the patterns and characteristics of rural service centres in southwestern Wisconsin and southern England and suggested that there were similarities in the two countries. Among other studies of settlement hierarchies in Britain which appeared in the 1960s was that by Thorpe and Rhodes (1966) who looked at the hierarchy of shopping centres on Tyneside. In turn the same

approach has been applied in "newer" settlement areas as seen, for example, in Smout's (1970) study of the hierarchy of central places in Natal, South Africa. Again, a consistency was established between the functions and population size of central places.

While studies of central place patterns and functional relationships proliferated in various parts of the world, some researchers in this field in the 1960s began to introduce greater precision into the pattern analysis. For example the nearest neighbour statistic was applied by Dacey (1962) to the settlement pattern in southwestern Wisconsin, and Jensen-Butler (1972) applied the same type of measurement to the central place system in County Durham, England. Sherwood (1970) has used the nearest neighbour technique to examine the spatial pattern of four selected functions, namely grocery stores, solicitors, accountants and men's hairdressers around Shrewsbury, England.

The theories of "growth pole" and "growth centre" have been paid considerable attention in economic and geographic literature and in the literature on regional development (Friedmann, 1967; Friedmann and Weaver, 1979; Moseley, 1973 and 1974; Darkoh, 1977; Glasson, 1978; Appalraju and Safier, 1976; Richardson, 1977 and 1978; Grafton, 1984; Hansen, 1972 and many other studies by individual researchers and United Nations publications). These concepts have been implemented in various developed and developing countries as an instrument for stimulating and steering the development of the less developed regions and for reorganizing the spatial structure of the national and regional development. Richardson (1978) pointed out the benefits to be derived from the concentration of investment in a central location as follows:

"The underlying idea of growth center theory is that

> the spatial concentration of economic activity in an urban centre of an underdeveloped region will raise the economic performance of the region as a whole more than if activities are either evenly dispersed or distributed randomly." (p. 28).

In recent years the growth centre and growth pole theories in developing countries have faced strong criticisms. The major critique is based on the inability of growth centres or growth poles to effectively benefit their hinterlands and to solve the socio-economic problems of the lagging rural region. Appalraju and Safier (1976) in their study of growth centre strategies in less developed countries pointed out that the achievement of growth centre strategies has been limited. Funnel (1976) has studied the role of small service centres in regional and rural development in East Africa, particularly in Uganda. He claimed that the service centres provide public services for only a limited proportion of the rural population. Darkoh (1977) indicated that the implementation of growth centre and growth pole approaches has not been successful in developing countries but he does suggest that they can be useful as a partial development strategy to achieve particular objectives if carefully adapted to reflect the social and economic characteristics of the region.

Alongside the studies of the closely related notions of central place, growth centre and growth pole theories, some research workers particularly in the United Kingdom have discussed and evaluated the idea of "key settlement" policy. The popularity of this concept in British rural planning literature is reflected in the large number of publication (Clout, 1972; Ash, 1976; Hancock, 1976; MacGregor, 1976; Cherry, 1976; Woodruffe, 1976; McLoughlin, 1976 and 1981; Cloke, 1979 and 1983; Cloke and Shaw, 1983; Gilder, 1979; Burke, Judge, Mordey and Hanning, 1982; and Pacione, 1984). This concept has played a central role in rural planning

policies in all types of rural areas in Britain during the last three decades.

The basic element of the key settlement approach is to concentrate socio-economic services in selected village centre which are intended to serve the population of its hinterland rather than have then dispersed throughout the settlement hierarchy. Because of the nature of the settlement patterns in rural areas which often feature small and widely scattered settlements, it has been argued that the key settlement approach may be the most efficient and economic means of providing public services. In recent years, however, a number of studies have begun to argue that key settlement policies have been less successful in stimulating economic development or tackling social problems in rural areas and the selected key village centres are often incapable to provide effective services to their surrounding settlements. However, Cloke (1979) in his book Key Settlements in Rural Areas has defended the concept and concluded that:

> "No real evidence has been advanced to demonstrate that alternative planning frameworks would provide a more practical or successful approach to rural planning than would the key settlement system." (pp. 233-234).

There are always, however, factors that enforce some degree of scattering of at least some rural services closer to the population so that the key settlement approach cannot cover every service. Generally some medical aid is needed close to each settlement to meet emergency needs even though specialist provision can best be provided in hospitals at more central locations. Similarly elementary schools should be located fairly close to children to avoid long bus journeys even if this means that those schools are smaller than preferred.

Telephone, road and other network facilities also need

to be well scattered if they are to get significant levels of use. On this Massam and Askew (1984) point out that network-type facilities, such as roads, electricity lines and similar provisions that come to the user (rather than the user having to go to them) need rather different modelling although the problem of the cost of their provision in rural areas is the same as for the point-type facilities. That is, the more the network of electricity lines is extended in a rural area, the greater is the cost to the provider and the lower the "inconvenience" cost to the user. Generally some compromise has to be established whereby the remotest parts of the rural area are not provided with these basic services till last, if at all, and they get a lower quality of service.

2.3 RURAL PLANNING STUDIES IN THE DEVELOPED COUNTRIES

Parallel with concepts on rural service provision has been a keen and continuous interest in rural planning in the developed countries. Much of this research was done in Britain and Western Europe. This has involved geographers and others interested in planning studies. But the main concerns in rural planning have changed over time, they have been diffuse and have not always been easy to identify. Much of the geographical literature in the rural planning field in the 1960s was concerned with the rationalisation of agricultural settlement and farm landscapes as seen in the work of Constandes (1961), Lambert (1961 and 1963), White (1966) and Clout (1969). Much of this was concerned with farmland consolidation schemes and rural depopulation in Western Europe. Changes in agricultural landscapes resulting from increasing technology in farming, leading to rural depopulation, also caused some rural geographers to examine

the problems of service provision in rural areas. Clout (1969) studied service provision in Dutch rural areas with the concept of key villages, while Green (1966) considered the theoretical basis for the contraction of settlement in remote areas. Others examined the impact of urbanization on the surrounding countryside.

In all, by 1969, Clout was able to identify three major trends in this increasing interest by geographers in rural planning: first, the rising demands of modern urbanised societies on the surrounding rural areas which in turn required new policies for these areas; second, the impact of technological changes in farming which affected rural environments; and lastly, the depopulation of many rural areas which therefore needed policies to protect and improve their service provision. Even so, Clout believed in 1969 that many studies in rural planning lacked a well-defined focus or methodology, and concluded that "an adequate synthesis of theory and practice in country planning has to be written." (p. 222).

Much progress towards identifying the main elements of rural studies within geography was made in the 1970s while economists, sociolologists and others have contributed towards this growing body of research. Bowler (1975) identified seven categories of rural research: agriculture; forestry; rural settlement; rural population; rural transportation; recreation and tourism and rural planning.

In 1980 Cloke identified, from the great range of publications in rural geography in the 1970s four main areas of interest: land use and economic studies; social studies; settlement studies; and a concern for a conceptual framework for rural studies. In turn he noted the rising interest in applied rural studies and therefore the need to develop an acceptable methodology to evalute predicted trends. As he

said:

> "applied rural geography has also yet to be fulfilled by current methodologies... It is evident that in everyaspect of the subject there is a wish to forecast states in order to calibrate suitable planning and management policies.. Rural geographers and and planners have thus far tended to shy away from the methodology of evaluation." (p. 203).

Other British geographers published widely on varied aspects of rural planning and rural problems. This can be seen in the books produced ranging from rural deprivation (Shaw, 1979) to the impact of recreation and second homes on the British countryside (Coppock and Duffield, 1975; and Coppock, 1977). Other areas of interest were rural settlement planning policies (McLaughlin, 1976; Woodruffe, 1976; and Cherry, 1976), key settlements (Cloke, 1979) and problems of remote rural areas (Ashton and Long, 1972). Numerous other articles, of course, covered those aspects of rural problems as well as others that became more popular in the 1980s.

The most recent years of the 1980s have seen a continued growth of interest in rural planning with a particular concern for the problems of the decline of many kinds of service provision in rural Britain and the difficulty of protecting some of those services by means of key settlement developments. In many rural areas one has seen the closure of schools, post offices and shops. Public transport facilities have been run down and health services threatened. Studies by Moseley (1979,1980 and 1984), Shaw (1980), Clout (1980), Jones (1980), McLaughlin (1981), Phillips and Williams (1984) and Bentham and Haynes (1985) have looked at this range of problems. Other work has examined the value of the key settlement approach in different types of rural area as a solution to declining services (Robins, 1983; Cloke, 1979, 1980 and 1983; and Pacione, 1984).

The recognition that different types of rural areas may require different types of settlement planning to provide services and other adjustments is also recognised in this most recent work, for example, by Grafton (1981). Robins (1983) has also stressed the need for different planning approaches in the four main types of rural area in Britain noted by Blacksell and Gilg (1981) - the urban edges, the agricultural lowlands, the hills and the remote uplands - each of which has a different set of planning problems.

2.4 RURAL DEVELOPMENT STUDIES IN THE DEVELOPING COUNTRIES

Development planning for rural regions has been largely ignored in most developing countries where most of the attention of planners and geographers alike has been focussed on urban and metropolitan areas. Rondinell (1979) has pointed out that the urban centres have received a much greater share of national investment. Urban residents in developing countries have much greater access to services, higher incomes and job opportunities than the people who live in the rural areas.

As was pointed out earlier rural areas therefore are generally much more poorly provided with public services and for this reason some developing nations have adopted various approaches to try to develop their rural areas. One of the more widely adopted approaches to development is the "basic needs approach" (Singh, 1979; Hicks, 1979 and 1980; Streeten, 1979; Conyers, 1982; and Thirlwall 1983). A major strategy of the basic needs approach is to provide the essential services such as education, health care, safe drinking water and public transport which everyone in any nation should have good access to. It is also assumed that the provision of such basic services is more likely to

alleviate poverty in rural areas more immediately than alternative means to accelerate economic growth there.

In recent years, however, the governments in developing countries have increasingly recognized the additional need for rural planning to ameliorate the problems of their rural populations. Planning should guide the extensive investment in physical infrastructure, the public services and productive activities required in rural areas. Rondinell pointed to four main areas where investment was often required: firstly, to expand markets for the agricultural products of the rural areas in order to raise rural incomes; secondly, to provide more services such as health, education, family planning and vocational training; thirdly, to create greater job opportunities in the rural areas; and lastly, action is needed to slow down and alter the common pattern of rural to urban migration. He also pointed out that this investment needed to be located in such a way as to create an integrated system of services and developments across the whole rural region of a country.

During the 1970s many developing countries adopted the concept of integrated rural development projects and a number of studies by geographers and others have focussed on this concept, or on the success of particular projects. These studies included those by Livingstone (1979) and Mabogunje (1980 and 1981). Binns and Farrell (1983) also examined relevant geographical considerations, such as the location of the project areas and the problems presented by the populations and areas left out of the projects. Binns and Farrell also put an emphasis on the importance of local participation in such projects and the requirement that planners pay attention to the local needs and ambitions which suggested that:

"Perhaps the most desirable strategy is to alter

> the focus of integrated rural developments so that they can form the basis of a coherent national policy which may be implemented by mass participation on a local level..It is suggested, therefore, that production goals should be carefully specifiedin response to local welfare needs." (p. 61).

In spite of the considerable efforts by the majority of the governments of the developing countries to expand public services, large parts of the populations, especially in the rural areas, have not benefitted greatly from these services. Hardiman and Midgley (1983) who examined public services in Sierra Leone showed the large disparity of access to education, health and other services between the urban and rural population. They also showed that the urban population not only have much better access to public services but made greater use of them. In contrast Hassouna (1983), in his study of health services in Bahrain, Egypt and Yemen Arab Republic, shows that accessibility to health services does not seem to be a great problem in those countries. However, he noted that women and children in particular in Egypt and Yemen suffer various serious diseases and he stressed the need for a more effective system of preventive medicine because of the relatively high infant mortality rates and level of communicable diseases.

Similar studies of health services in Nigeria (Stock, 1983 and Okafor, 1982); the Yemen Arab Republic (El Bushra, 1985); Uganda (Gershenberg and Haskell, 1972); Indonesia (Chernichovsky and Meesook, 1986); Bangladesh (Gish, 1981); among the Tuareg and Maure nomads in the West African Sahel (Imperato, 1974); Ghana (Sharpston, 1972); Pakistan (Rahman, 1980 and Suddiqi, 1980); India (Ramachandran and Shastri, 1983); Guatemala (Annis, 1981); Malawi (Msukwa, 1981); and Tunisia (Benyoussef, 1974) have shown the limitations of many existing health services to meet the basic needs of the population, particularly in the rural areas.

Various studies by geographers and others, such as Gould (1971, 1972 and 1974), Guruge (1977), Coleman (1969), D'Aeth (1975), Ayeni (1982), Birks and Rimner (1984), Campos (1980), and Abdelwasse (1983) have looked at education provision in developing countries. These reveal the determination of governments to expand and improve educational opportunities to all sectors of their population although large disparities were seen to exist in enrollments and quality of education between different countries and between different areas in each nation. However, one study along these same lines in the Middle East by Janzen (1983) examined recent public service developments in the nomadic area of the Southern Province of Dhofar, in the Sultanate of Oman. The recent rapid expansion by the government in the provision of transport facilities and other basic needs like water supplies, education, health services, the provision of religious establishments, the stimulation of retail trade and the introduction of small scale programmes to improve agriculture, livestock and fisheries had all confirmed that the nomadic population of Dhofar had shared in many of the more modern developments which other parts of the Sultanate had also enjoyed.

Lonsdale and Enyedi's book (1984) on rural services attempted to examine the provision of rural public services in a number of developing countries in many different parts of the world ranging from Mexico and Honduras in the Americas to Nigeria in Africa, and India and Indonesia in Asia. All of these national studies show that government agencies are unable to immediately meet all basic needs of the rural areas and that a particular political bias often did much to set the priorities for rural development, so that what was considered basic in one country differed from that of another.

A separate area of interest in the rural development of some developing countries has been the examination of the periodic marketing system and how it is being modified as newer systems of urban-based marketing influence the rural areas of those countries. These studies include those by Scott (1972) and Mckim (1972) in West Africa, Soja (1972) in Uganda and Park (1981) in Korea. Park, in analysing the periodic marketing system in Korea, for example, claimed that the traditional marketing system has greatly contributed to the development of rural Korea and predicted that many of those traditional markets in the areas more remote from urban centres would survive, whereas those which were less active or were close to urban centres would disappear or become absorbed in larger markets nearby.

But in general it seems that the experience of planning for, and providing services in, the rural regions of developed nations provides only poor guidance for the developing nations. Little use has been made of concepts in rural geography and rural planning from developed countries in the developing countries. There are several reasons for this. Firstly, the developed nations have had a much longer time period over which to evolve patterns and programmes of provision than the rushed programmes in the developing world. More data on the change in rural service provision is available in the developed nations on which to base policies and programmes.

Secondly, at the present time in the developed countries there is often a programme of rationalisation of rural services going on in parallel with other programmes of expansion. This is not the case in the developing nations. For example, Williams (1981) and Holmes (1981 and 1984) reported from Australia that thousands of small rural schools are being closed down and replaced by fewer larger

centralized schools, at the same time as the road and electricity supply programmes in rural areas are continuing to grow. Similarly in Britain a policy of identifying "key" villages by which to protect services parallels the rundown of services in many other smaller villages. None of this is the case in the developing world where all programmes are expanding and the main problem is to keep up the pace, to meet the basic needs and to create an efficient set of public services.

Thirdly, as government agencies in the developing nations are unable immediately to meet all the basic needs in their rural areas, it is a matter of establishing sensible priorities. Various studies in Nigeria (McNulty, Ayeni, Filani and Olaore, 1984) and Mexico (Lopez, 1984) have shown the importance of the political bias in setting out priorities. Five year plans often establish national targets as part of this political programme, such as Mexico's aim to have a secondary school in every place of over 3,000 population by 1982 and six years of schooling for all (Lopez, 1984); and India's Plan to have a health centre in all towns of 80,000 (Kulkarni and Karmarkar, 1984). However, many developing countries have not been successful in achieving the targets of their development plans, partly because the governments of these countries overemphasize plan formulation at the expense of plan implementation, and partly because of the shortages of skilled administrative personnel to realize the objectives of the plans. Developed nations never established these types of targets and because their rural programmes developed more slowly they were less concerned with priorities.

Finally, responsibility for rural planning is passing more from national governments to local governments because only local officials can be aware of local needs. In the

advanced countries, the arrangement of planning tiers from the national to the district levels is especially important to rural areas. This planning hierarchy does not seem to exist in many developing nations making local initiatives difficult, and making it more difficult to meet local needs. Many developing countries put more emphasis on meeting national plan targets than creating effective regional strategies.

2.5 DEVELOPMENT PLANNING STUDIES IN THE STUDY REGION

There is only a very limited amount of published material directly related to Asir or to aspects of public service provision in the Asir region, just as there is little for the whole of Saudi Arabia. Most of the relevant material which does exist is found in a few government reports from various ministries, largely aiming to provide basic information on the region.

A few studies of the Asir area can be found in some traveller's reports and studies of the Arabian Peninsula from the 1940s and earlier, such as Cornwalis (1916), the Naval Intelligence Handbook of Arabia (1920 and 1946), Philby (1952), Thesiger (1947), Twitchell (1947), and others. The main features of these studies are the descriptions of the modes of life in Asir and the adventures of travelling through the region. These studies are general and are largely of historical interest only. For example, Thesiger (1947) described the Thursday market in Bani Umer in Asir as follows:

> "Here cattle, sheep and goats, a few camels and donkeys are sold, also grain, coffee, salt and cloth, earthenware pots, palm-frond mats, baskets and ropes, grindstones, vegetables, honey and sweet-smelling herbs." (p. 189).

In more recent years several studies of the Asir region by Saudi geographers and others have appeared in both Arabic and English. But most are broad-ranging and general. These include Rafi' (1954) Hamza (1968), Mughram (1973), Abdulfattah (1981), Al-Blehed (1982) and Al-Sharif (1984). Mughram studied the Sarat region, that is the mountainous areas from Taif in the north to Dhahran Aljanub in the south and examined rural changes and development particularly in Al Bahah Province. Al-Blehed (1982) in a geographical survey of Asir in which he included Al-Bahah and Najran, noted that "Asir, until recently, has been almost entirely "terra incognita"(p. 35). He examined various aspects of socio-economic changes in the region. Al-Sharif (1984) included Asir, Najran, Jizan and Al Bahah provinces in his geographical study of the southwest region of Saudi Arabia and provided very general geographical information on these areas. Abdulfatah (1981) wrote about some aspects of the geography, agriculture and farming techniques and the traditional pattern of settlement in the southwest region of Saudi Arabia and like others stressed that "Asir is one of the least-known geographical areas of the world" (p. 13).

There is only a handful of studies of particular aspects of service provision in Asir. These included, Sebai (1981, 1984 and 1987) who has studied the health services and the epidemiology of the main health problems in Turaba, Asir, as well as places in Hejaz and Qassim provinces, to emphasis the need for the expansion of health care services in rural areas. Sebai suggested that the expansion of health services should be accompanied by an understanding of the life style and values of the people, and a better knowledge of the local health ecology and the effective utilization of health resources.

Birch and Al-Blehed (1984) have examined the literacy skills and educational development in Asir, based on data from the 1974 census. This showed that literacy and skill levels are low throughout Asir particularly in remote rural areas and within the nomadic population. A similar situation is found in the school provision.

Al-Blebed (1984) has explained the growth of boys' schools and their spatial pattern in the Abha area from 1936 to 1982. He showed that the expansion in boys' elementary schools was at the low rate of about one new school per year until 1959, and only become fast during the 1970s when about seventeen new schools were opened each year. Al-Blehed claimed that class size was favorable in Abha's schools, but the conditions of schools are poor, many of them in rented buildings often in poor condition.

Al-Qahtani (1985) has studied the rural health services in Asir region, particularly the two primary health care centres of Alwadiyen and Tamnia. He indicated that the primary health care services are not evenly distributed in Asir province particularly in the areas where the study was focused. He also showed that the primary health care services suffer from a poor level of communications and resources, but he claimed that there is no significant effect of distance on level of utilization of primary health care services. This conclusion was based on distance travelled for treatment among various occupation, age and sex groups. However, the males have a tendency to use these services more than females and illiterate men more than their literate counterparts.

Al-Zaidi (1984) has examined the development of the southern region of Saudi Arabia which included the provinces of Asir, Jizan and Najran. He outlined the changes in the political, cultural, economic and social aspects in this

region since 1920 to the late 1970s, and indicated that most of the improvements in the physical infrastructure and the expansion of social services occurred recently after the large increase in the government income from oil in the 1970s. However, he pointed out that most of this development has been unevenly distributed between rural and urban areas of the region and concluded that:

> "The new trends of development which have takenplace in the Southern region have been concentrated mostly in the main town centres of the region, such as Abha, Khamis Mushayt, Najran and Jizan, where the large-scale development projects have been carried out. The rest of the area where the majority of the settlements are located and most of the population live have nothing except an elementary school for boys and girls, a health centre operated by a medical assistant, and sometimes a dispensary with a doctor and small medical staff. The nomadic areas have nothing." (p. 427).

As was pointed out earlier, some of the most relevant material on aspects of public service provision in the Asir region is found in a few governmental reports. The first of these studies was the International Land Development Consultants' (ILACO) socio-economic development plan for the Southwest region of the Kingdom published and submitted to the government's Central Planning Organization in 1973. The plan period covered the years 1973/74-1979/80. The study provided background information on such matters as the existing situation of the region's socio-economic structure, the region's medium and long-term development, the development objectives and strategy, the development programmes for the study period, and the southwest regional budget. This became the foundation for an integrated socio-economic development plan for the provinces and subprovinces of Asir, Najran, Jizan, Al Bahah, Alqunfudah and Allith.

In May 1974 a contract was signed between the Ministry of Municipal and Rural Affairs and the consultancy organization of Kenzo Tange (Japan). Under this the

consultancy company prepared a comprehensive study of existing socio-economic and planning conditions in the Southern region. The report Southern Region Project Study: Existing Conditions which came from this study was completed in April 1976. Covering the Asir, Jizan and Najran regions, it provided the basis for several more detailed studies carried out by the same company on various aspects of the region over the next few years. For example, A Physical Plan Report: Southern Region appeared in 1978 and a Preliminary Master Plan for the Cities of Abha, Khamis Mushayt and Bishah was published in 1978.

As a result of this work an emphasis was placed on further studies of, and plans for, urban development in the southwest and the need to make all places, including towns and villages, healthier and more pleasant places to live in as well as improving their efficiency as locations for trade, industry and services. Under agreement 206 signed in 1980 between the Ministry of Municipal and Rural Affairs and the Scan Plan Sweco, a plan was drawn up for the Abha area. This provided eight reports for an Abha master plan including a master directive and executive plans and action area plans for the Abha metropolitan area which included the cities of Abha, Khamis Mushayt, Ahad Rufaydah and the surrounding villages.

In all of this initial planning, work on the rural areas and the villages has lagged behind that for the fast-growing urban centres like Abha and Khamis Mushayt. Part of the reason is that little data had been collected on the hundreds of scattered villages found in Asir region. To try to correct this in March 1983 the offices of the Asir Emirate produced a general survey in nine volumes of the settlements in the province and the population they contained. An atlas supported this compendium of

information. It is the appearance of this first modern gazetteer for Asir region that has made possible much of the analysis of the settlement pattern and its basic services reported in chapters four to seven of this study.

The most recent stage in this governmental process of gathering basic information for the planning needs of the rural areas of Asir province was a socio-economic survey of villages and nomadic settlements, undertaken by the Sogreah consultancy company in 1984 under the guidance of the Deputy Ministry for Rural Affairs of the Ministry of Municipal and Rural Affairs. This study followed on the Asir Emirate study and provided similar information to it.

It should also be noted that most of these reports were written by foreign consultant companies lacking the knowledge of the local population and its needs. They are often very general and of little scientific value because of gaps in coverage and errors. However, they are the only available information on some aspects of development in the region but must be utilised cautiously.

The only other sources of published information on life and development in rural Asir are to be found in a handful of mainly general articles in a number of recent editions of magazines and newspapers. One of the first of these was a descriptive account in a 1962 edition of the Aramco Journal entitled "Across the mountains to Asir" which outlined the cultural life of the inhabitants of Asir, Asir's geography and farming, and educational and other development plans for the region. Much more recently a 1980 edition of Saudi Business Journal detailed recent socio-economic developments in Asir province and covered such topics as agriculture, road building, education, industry, trade, water supplies, recreational facilities, tourism and the landscape.

Some Saudi newspapers have in recent years published brief surveys on aspects or parts of the Asir region, often including interviews with government officials and prominent persons in the region. Most notably these have included reports on Khamis Mushayt, Bishah, Sarat Abidah, Alnimas, Muhayil and Dhahran Aljanub which appeared in various 1985-1987 editions of the Riyadh newspaper Al-Jazeerah. Surveys of Sabt Alalayah and Abha appeared in Al-Riyadh in the summer 1985 and 1988. Each of these town surveys gave information on various service sectors such as municipal services, education, health and brief histories of development in these areas. Interviews with the governor of Asir Province have appeared in Al-Yamamah magazine (Riyadh) and Al Majalla magazine (London) discussing developments in the province particularly in connection with the Fourth national development plan (1985-1990).

CHAPTER THREE

REGIONAL DEVELOPMENT PLANNING IN SAUDI ARABIA

3.1 INTRODUCTION

Prior to the discovery of oil in the Kingdom in 1938, the national economy was not of sufficient size to be able to support an effective social and physical infrastructure. Economic activities were mainly confined to the traditional ones of livestock raising, agriculture, and the production of simple tools. However, with the increasing flow of oil in commercial quantities, particularly after the end of the Second World War, the public sector and private incomes expanded quickly allowing rapid socio-economic changes to occur. This has been particularly marked since 1970 when major expansion occurred in government services, public utilities and the national infrastructure.

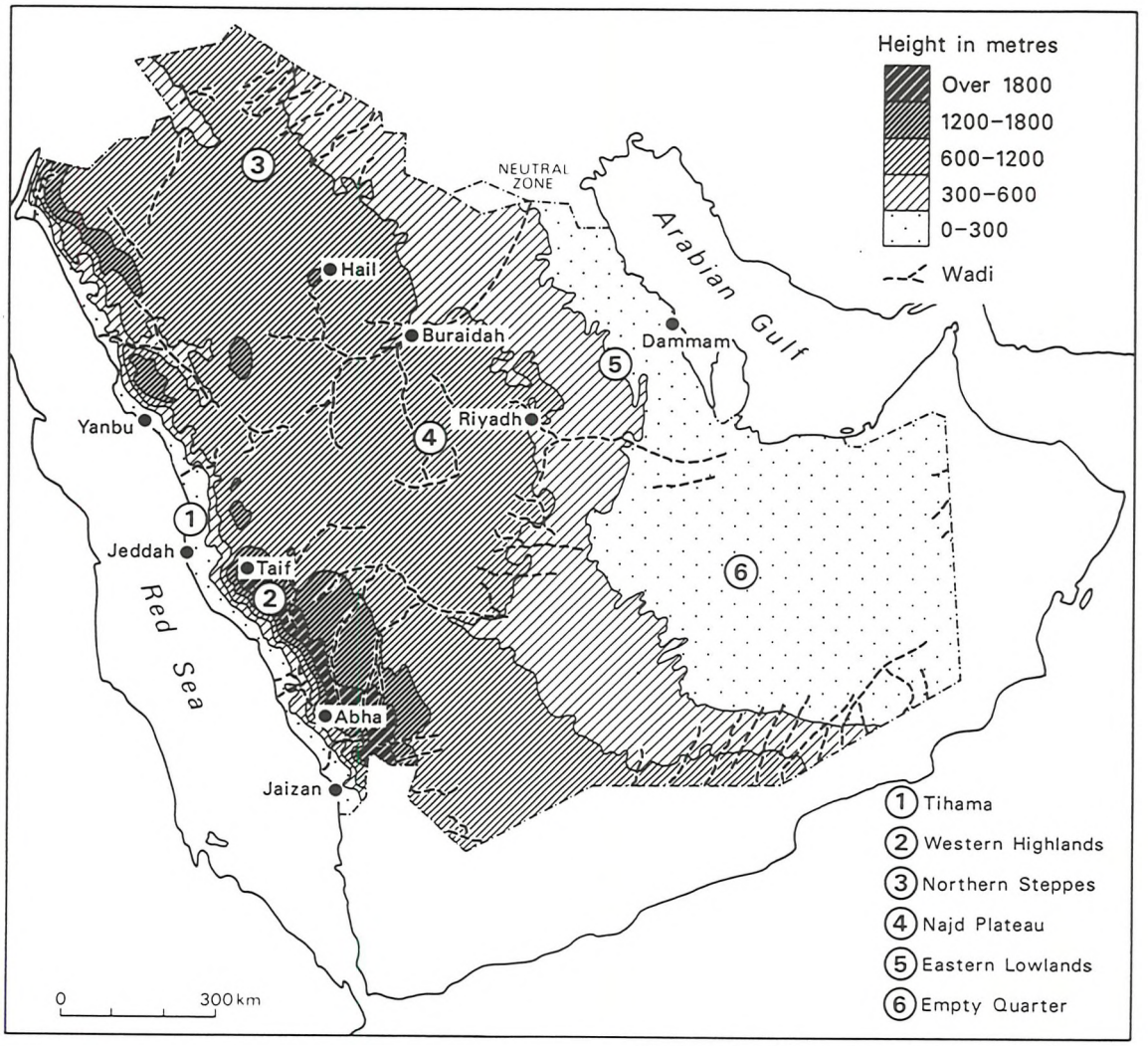
As in many other developing countries, Saudi Arabia has adopted a strongly centralized planning system to guide the development of the physical and social infrastructure, and the purpose of this chapter is to review that planning system and the regional inequalities in infrastructure which the weaknesses of the regional component in the national planning have given rise to. Before discussing the national and regional planning, a brief review of the geographical setting and population of the Kingdom is appropriate to provide an understanding of the essential diversity of the country.

Saudi Arabia is a extensive country, with an area of about 2.2 million square km. It comprises about 80 percent of the area of the Arabian Peninsula and is bounded by several other Middle Eastern countries: Jordan, Iraq and Kuwait to the north; North and South Yemen on the south; and

Qatar, the United Arab Emirates and the Sultanate of Oman on the east. Physically the Kingdom can be divided into six parts from west to east (Fig. 3.1):

1) The western coastal plain known as the Tihama, along the Red Sea coast, runs from the Jordan border in the north to the Yemen border in the south, a distance of about 1,800 km. It is about 70 km wide in the south and gradually narrows to less than 25 km in the north. This area is characterised by extensive marshlands and lava fields. The drainage which flows into the Tihama from the mountains which lie to the east of it creates several fertile wadis which have an important effects on the settlement patterns and economic activities. The main settlements are Alwajh and Yanbu in the north, Jeddah in the centre and Alqunfudah and Jizan in the south.

2) The western highlands, consisting of the mountain ranges of Alhijaz in the north and Alsarat in the south, run parallel to the coastal plain. The width and height of these mountains vary from north to south. In Asir in the south the highest peaks rise to about 3,000 metres and form the highest mountain in Saudi Arabia but they are lower (1,200 m) in the north. The ranges are broken here and there by a series of fertile wadis which allow for settlement between the highlands. The most important of these wadis are Alhamad, Yanbu and Fatima in the north, and Bishah, Tathlith, Allith and Jizan in the south. The cultivated lands in these mountains are more fertile than any other part in the country. More than 25 percent of the Kingdom's population lives in thousands of villages and a few small urban centres in these highlands such as Taif, Al Bahah, Abha, Khamis Mushayt and Najran. These highlands comprise large parts of the Precambrian Arabian Shield which have useful mineral deposits such as copper, lead, zinc, gold,



Source: Bindagji,1978,Atlas of Saudi Arabia,O.U.P.

Figure 3.1 Relief map of Saudi Arabia

silver, iron and uranium (Fourth development plan, 1985).

3) To the east of the mountains in the north, and occupying all the northern area of the Kingdom, is the northern steppeland which is bordered by the desert of Al Nafud to the south and reaches to the Jordanian and Iraqi borders to the north. The main feature of this area is Wadi Alsirhan, one of the largest wadi systems in the Kingdom. The norther steppe is dry with limited grass and vegetation cover which is extensively used for pasture by nomadic herders. The main oases in this area are Aljawf, Sakaka and Arar.

4) To the east of the mountains in the central area is the Najd plateau which extends for 900 km to the east as far as the Dahna sands. To its north is the the desert of Al Nafud and to the south is the Empty Quarter. The height of the Najd plateau ranges from 600 to 1,200 meters. Its main geographical features are the mountains of Aja and Salma in the north, and the Tuwayg mountains which run southwest to northwest for a distance of about 800 km. The plateau is crossed by a number of important wadis such as Wadi Al Romah, Al Aflaj and Wadi Hanifah. Settlements are scattered throughout the Najd plateau in hundreds of small oases. The most important of these settlements are Riyadh, the capital of Saudi Arabia, and Hail and Buraydah in the north. In recent years parts of the area have been transformed into many fertile farms by extraction of the deep groundwater.

5) The eastern lowland which lies east of the Dahna sands has an average height of about 360 metres and declines down to the Arabian Gulf. This area includes all the major oil fields in the Kingdom. It also contains many fertile oases, the largest and the most important being Al Hasa and Al Qatif which result from natural springs. Many wells

provide enough water for extensive date-palm farming.

6) Finally occupying the southern one fifth of the country is the Empty Quarter or Al Rub Al Khali, a vast area of sand covering about 400,000 square km. Close to the Arabian Gulf coast its average height is 130 metres but it rises to about 500 metres in the south. This desert is virtually uninhabited.

All of Saudi Arabia has a dry climate but not all of it is desertic. The north and central areas enjoy a more continental dry climate, hot in summer and cool in winter. All seasons are dry but an average rainfall of 96 mm is recorded. On the coasts also the humidity is higher and there is rather more rainfall, especially in the southwest, where variations in temperature are moderated. The mountainous areas in the west enjoy a distinctly milder climate than the rest of the Kingdom, as well as a more abundant rainfall of over 250 mm in many places (Table 3.1).

No national census has been conducted since 1974 and later estimates are very broad scale. In 1974 the population of the Kingdom stood at 7,008,544, including about one million foreigners. About 46 percent of that population lived in towns and cities with 5,000 inhabitants or more. About one quarter of the population was defined as nomadic and rather more, 28 percent or two million of the Kingdom's population, were considered rural, living in villages with less than 5,000 persons each. The most recent estimate of the Kingdom's population was 11.09 million in 1985 (Ritchie, 1987), close to a Ministry of Planning estimate of 11.3 million for the same year.

Because of continued high birth rates as well as declining death rates the population is characterized by a large youthful element. In 1974 persons under 20 years of age constituted 56 percent of the total population. The

Table: 3.1

Average temperature and rainfall for selected meteorological stations, 1985.

Meteorological Station	Temperature (°C)		Rainfall (mm)
	Max.	Min.	
Riyadh	33.1	19.7	71.8
Jeddah	34.4	22.5	71.4
Makkah	38.1	23.8	123.5
Medina	34.2	21.1	120.2
Taif	28.8	16.1	285.0
Dhahran	33.1	20.2	67.9
Hail	28.4	14.0	170.7
Qaseem	31.1	16.8	140.5
Jizan	35.5	25.9	105.4
Yanbu	34.6	20.9	39.2
Al Jwaf	28.3	14.4	65.3
Bishah	32.4	16.1	189.4
Arar	29.0	14.7	67.9
Najran	31.4	16.9	75.6
Abha	25.1	12.0	274.4
Al Bahah	28.6	16.1	217.6

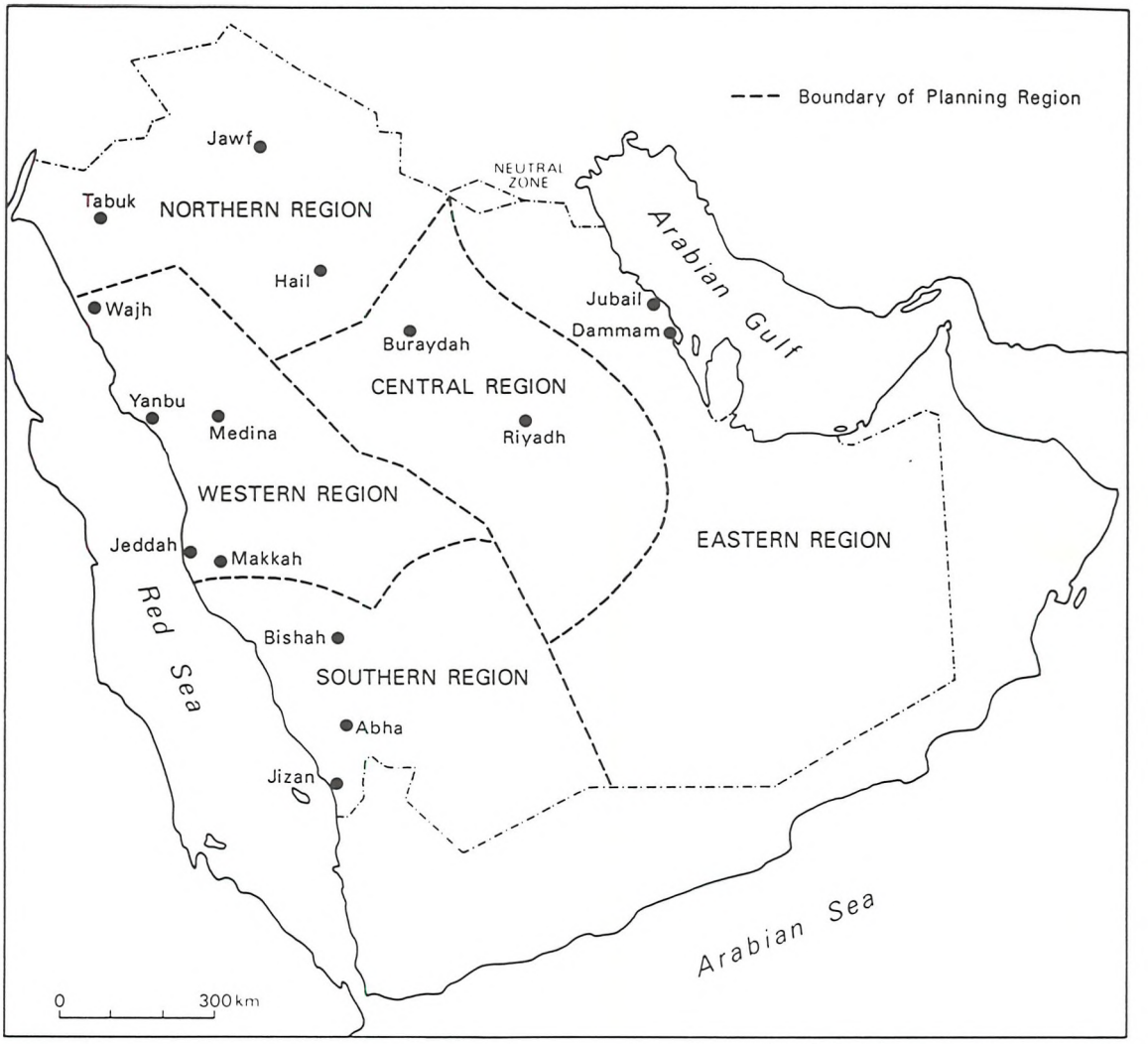
Source: Statistical Year Book, No. 21, 22, 1985, 1986. PP. 33, 35, 40.

population is also believed to be growing very rapidly. Based on the Ministry of Planning estimate of 11.3 million in 1985 it is assumed to have grown at more than 3.5 percent per year since 1974.

3.2 REGIONAL DIVISIONS

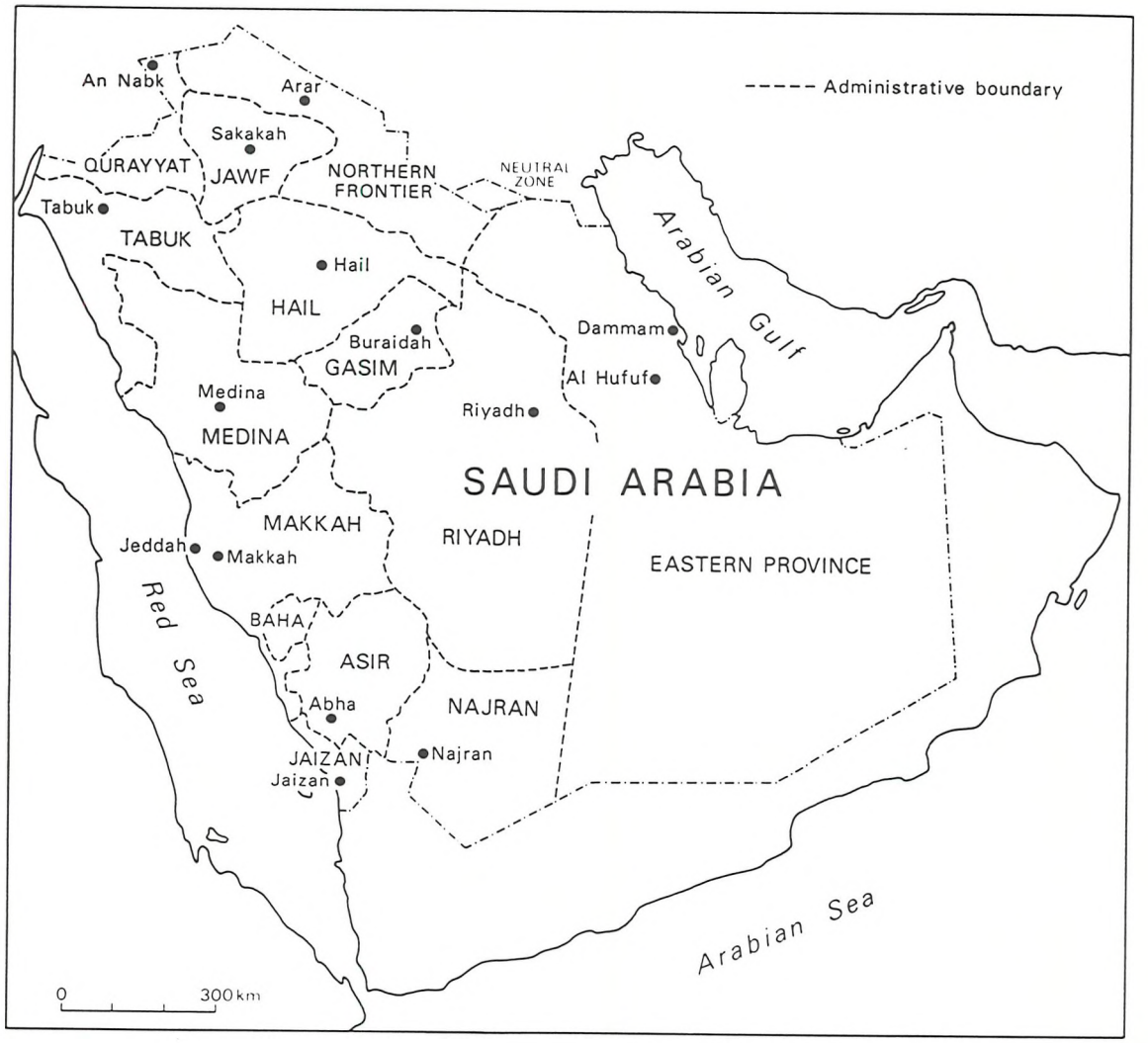
Despite the physical divisions outlined earlier the Kingdom of Saudi Arabia is subdivided for planning purposes into five regions little related to the physical regions. Each planning region is intended to be a fairly homogeneous part of the country in terms of its physical, social, historical and economic features. The five planning regions - Central, Western, Eastern, Southern and Northern are shown in Fig. 3.2. The Kingdom is also divided into fourteen provinces or governorates, each with a separate governor (emir). These are shown in Fig. 3.3. Each Emirate in turn is subdivided into subemirates. It can be seen that there are few common boundaries between the planning regions and the provinces. This is due mainly to the fact that the planning region divisions were adopted by the Ministry of Planning separately from the provincial divisions of the Ministry of the Interior. However, for many purposes each planning region, province and subemirate constitutes a planning unit (Fourth development plan, 1985).

The five planning regions vary greatly in their area, the number of their inhabitants and settlements, as well as their economic structure. Table 3.2 shows some of these variations. The Western region is the most populated with about 34 percent of the total population followed by the Central and Southern regions with about 24 and 21 percent each. The Eastern region with the huge Empty Quarter and the predominantly steppic Northern region are relatively less



Source: Fourth Development Plan, 1985, p.XL

Figure 3.2 The Regional Planning Divisions of Saudi Arabia



Source: Bindagji,1978: Atlas of Saudi Arabia, O.U.P.

Figure 3.3 The Provinces of Saudi Arabia

populated, with 11 and 10 percent of the national population respectively.

The Northern and Southern regions are different from other parts of the country in terms of their greater nomadic and rural populations. Over half of the population in the Southern region is classed as rural and over half of the population in the Northern region is nomadic, whereas the population in the other three regions is predominantly urban.

Over half of Saudi Arabia is classed as desert or semi-desert so that population densities are generally low. On the basis of the estimated population in 1985, overall density was 5.2 persons per square km, but 1974 data has to be used for regional densities. In 1974 the Western region was the most densely populated region in the country, with an average density of about 8.2 persons per square km. This higher density mainly resulted from the large urban centres of Jeddah, Makkah, Medina and Taif in the Western region which together accounted for 42 percent of the total urban population. The Southern region was the second most densely settled area with about 6 persons per square km but this greater density is almost entirely the result of a very large number of village settlements rather than urban centres. Major parts of the provinces of Al Bahah and Asir are well settled with villages and the average density of population in Jizan province reaches over 26 persons per square km. The average density in the other three regions is very low because of their extensive desert areas particularly in the Eastern region with its extensive Empty Quarter. This region forms 36 percent of the area of the country but has only 11 percent of the population.

Table 3.2 has already indicated that the populations in the Western, Central and Eastern regions are predominantly

Table: 3.2

Regional distribution of population, density and settlement type, 1974.

Region	Total population	%	Urban %	Rural %	Nomad %	Area km	%	Pop. density per km
Central	1,583,688	23.5	54.6	19.7	25.7	408,366	18.9	3.9
Western	2,276,852	33.9	60.5	18.5	21.0	276,576	12.8	8.2
Eastern	762,037	11.3	64.3	25.3	10.4	778,479	36.1	1.0
Southern	1,416,961	21.1	16.1	59.4	24.5	244,502	11.3	5.8
Northern	686,928	10.2	28.7	18.7	52.6	448,830	20.8	1.5
TOTAL	6,726,466	100.0	46.7	28.4	24.9	2,156,753	100.0	3.1

Note: The total population figure does not include 210,000 nomads living along the northern boundaries; and 72,000 persons living abroad.
Source: Compiled from Population Atlas, King Saud University, 1981.

urban unlike in the Northern and Southern region. At the time of the 1974 census, there were 59 urban centres of 5,000 persons or more and Table 3.3 shows their regional distribution according to their population size. It can be seen all the major cities, of 100,000 inhabitants or more, were located in the Western, Eastern and Central regions. The existence of large urban centres in these region has been attributed mainly to three factors. In the Western region religion has played a major role in the growth of the holy cities of Makkah and Medina, while Jeddah has acted as the main commercial centre of this important region. Taif is the main summer resort for the government.

The Central region has become the focus of expansive urbanization, particularly in the case of Riyadh as the capital, and therefore a powerful magnet for trade and other activities that need to be at the centre of decision making. Buraydah to the north also acts as the administrative centre of the important Qassim province. In the Eastern region the growth of the oil industry has been responsible for the creation of numbers of new towns, such as Dammam, Al Khobar, Dhahran and Al Jabail. The Western, Central and Eastern regions also have several urban places of intermediate and smaller size. In contrast the Southern and Northern regions in 1974 had the lowest levels of urbanization, with only 7 and 6 percent of total urban population in the country. All of the towns in these two regions were small in 1974 with only one, Tabuk, in Northern region, rising above 50,000 population. The Southern region had only four towns - Abha, Khamis Mushayt, Najran and Jizan- none of which were larger than 50,000 population each.

Because this thesis is more concerned with the problems of planning for the rural population in part of the less urban Southern region, more attention should be devoted to

Table: 3.3

Regional distribution of urban centres according to population size, 1974

Region	Cities Over 100,000	Cities 50,000 to 100,000	Cities 30,000 to 50,000	Cities 15,000 to 30,000	Towns 5,000 to 15,000	No. of Cities	Urban Population	%
Central	1	1	-	2	9	13	861,918	27.3
Western	4	-	-	2	4	10	1,379,047	43.7
Eastern	2	1	1	6	4	14	489,505	15.5
Southern	-	-	4	-	8	12	228,241	7.2
Northern	-	1	1	2	6	10	197,124	6.2
TOTAL	7	3	6	12	31	59	3,155,835	100.0

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

this population sector. Estimates of the size of the Saudi rural population vary from one source to another. The 1974 Census showed the rural sedentary population of the Kingdom at 1,907,115, or 28.4 percent of the total population, while the nomad population was 1,673,987, or 24.9 percent. This means that more than half (53.3 percent) of the Kingdom's population lived as villagers or nomads in rural areas in 1974. The Census did not provide detail on the nature, composition and the number of settlements in which this rural and nomadic population lived, although it gave a total of 20,995 populated places in the whole country. This included towns, villages, isolated farms, watering points and other temporary settlements occupied by nomads. It is not possible from this to determine the total number of villages in the country but it clearly runs into several thousands. In recent years their number has probably increased as more nomads have settled in new villages or hijar.*

A further socio-economic survey of villages and hijar was conducted in 1984 by the Sogreah consultancy for the Deputy Ministry For Rural Affairs. It enumerated the total rural sedentary population at 2,599,322 scattered among 8,953 villages and 1,412 hijar. The distribution of these settlements in the country's five planning regions is shown in Table 3.4. It can be seen that the Southern region has the largest share of sedentary rural population, with about 45 percent of the total. This put the Southern region well ahead of the next most important region, the West, with 25.3 percent. At the same time, the Southern region also had 51.1 percent of the Kingdom's villages and hijar again well ahead

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* The hijar differ from the villages only by their origin. They are mainly new settlements created by the sedentarisation of nomads but have much the same function as villages.

Table: 3.4

Regional distribution of rural population and number of villages and hijar, 1984.

Region	Rural Population	%	No. of villages & hijar	%	No. of Villages	%	No. of Hijar	%
Central	426,733	16.4	1,178	11.4	658	7.4	520	36.8
Western	656,112	25.3	3,086	29.8	2,750	30.7	344	24.4
Eastern	184,511	7.1	191	1.8	73	0.8	188	8.4
Southern	1,164,466	44.8	5,299	51.1	5,149	57.5	142	10.1
Northern	167,500	6.4	611	5.9	323	3.6	288	20.4
TOTAL	2,599,322	100.0	10,365	100.0	8,953	100.0	1,412	100.0

Source: Compiled from the Socio-Economic Survey, Sogreah, 1984.

of the Western region. Together the Southern and Western regions had over 70 percent of the sedentary rural population and over 80 percent of the rural settlements.

Only in the case of the hijar type of rural settlement are some other regions well represented but this type of settlement is, of course, far less numerous than the old traditional rural village. The high percentages of hijar settlement in the Central, Western and Northern regions are due to the large number of nomads who have tended in recent years to settle at permanent locations in order to benefit from government services and facilities. There is no reliable information about the present numbers and distribution of still unsettled nomad population (bedouins) but it is thought that their numbers have fallen markedly in the last decade as many settled in hijar or migrated to urban centres.

Just as there is no up to date national census data so there is no detailed information available about inter-regional and intra-regional migration in the Kingdom. In the last decade there have been substantial increases in the population of the larger cities of the core Western, Central and Eastern regions, where the urban population in those larger cities is estimated to have increased from 20 percent of the total regional population in 1970 to 42 percent in 1980 (Third development plan, 1980). Much of this increase resulted from migration. This migration into the large cities of the core region was from two sources. First, the majority of the foreign workers which totalled over two and half million in 1985, are found in the main urban centres of the core regions, where job opportunities are greatest. Second, there has been a large movement of rural people into the main cities of the country, such that the Third development plan estimated that the rural sedentary and

nomadic population declined from 60 percent of the total population in 1970 to 46 percent in 1980.

Such migration to the major urban centres reflects the uneven pattern of employment opportunities as a result of the differing structural patterns of the regional economies. In fact there is a marked lack of adequate data concering regional employment and its distribution by various economic activities. What data is available is also old like the population data. However, Table 3.5 gives some indications of the regional patterns. It shows that in 1978 employment in primary activities, mainly agriculture and livestock production, dominated the largely rural economies of the Southern and Northern regions. Over 60 percent of employment in those two regions was in primary activities, with secondary (manufacturing) employment very limited, and tertiary activities less developed than in the core regions. The Northern and Southern regions had less than 30 percent of their workforce in tertiary activities compared with a national average of 40 percent. The agriculture sector has been the slowest growing and the least productive employment sector in the national economy. Agricultural employment is estimated to have declined by 2.9 percent between 1975 and 1980 as many farmers found better paid jobs in other parts of the economy. Areas where the economy is predominantly based on agriculture are likely to be less able to support a thriving tertiary sector.

The sectoral distribution of employment in the Central, Western and Eastern regions shows a quite different and more mature pattern. The proportion of employment in the primary sector in each of these regions in 1978 was well below the national average, especially in the Eastern region (21 percent) where the oil industry has encouraged a strong development in secondary employment. Employment in the

secondary sector is also at or near the national average in the Central and Western regions. Employment in tertiary activities is also above the national average in these three regions and particularly in the Central region where many government and commercial jobs are centred in Riyadh, but also in the diversified economy of the Western region around Jeddah and Makkah.

Table: 3.5

The regional distribution of employment by type of economic activity, 1978 (percent).

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

Source: Al-Ibrahim, 1982, p. 144.

Another means of indicating the regional variety in economic activity is by examining the regional distribution of GDP excluding oil. This is shown by major activity in Table 3.6 for 1976/77. The dominant position of agriculture in the economy of the Southern and Northern regions, where it accounted for a third of the regional GDP, contrasts them with the other regions where it represented no more than 5 percent of the regional GDP. In those other regions the distribution, construction and other services created most employment with manufacturing creating a small proportion of GDP. All of these activities were less important to the regional GDP of the Southern and Northern regions whose economies were less diversified and more rural based than in the other regions.

Table 3.6

Percentage distribution of regional non-oil GDP by major activity, 1976/77.

Activities	Central	Western	Eastern	Southern	Northern
Agriculture	5.6	3.1	4.9	33.2	32.2
Manufacturing, Mining and Utilities	6.2	6.7	6.5	3.1	2.6
Construction	25.1	25.9	26.5	16.3	16.7
Distribution	21.7	26.6	21.7	11.8	8.0
Transportation and Communications	4.2	4.9	8.8	4.3	8.3
Other Services	24.5	22.7	21.7	15.5	16.5
Government Services	12.6	10.2	9.8	16.0	15.8
TOTAL NON-OIL GDP	100.0	100.0	100.0	100.0	100.0

Source: Third development plan, 1980, P. 60.

3.3 THE DEVELOPMENT OF THE PLANNING ORGANIZATION

Steps towards the development of a formal system of planning in the Kingdom of Saudi Arabia did not begin until 1958 and were a direct result of the financial crisis in 1956/57. For more than a quarter of century after the unification of the Kingdom in 1932, no deliberate public policies and plans to organize and coordinate strategies for economic development had been laid out. The government was spending more than its income by the 1950s and the financial crisis of 1956-57 resulted from a series of balance of payment deficits following a decrease in oil revenues. Because the government was not able to reduce expenditure to the level of available revenues, increased power was given to Crown Prince Faisal (who became King Faisal in 1964) to lead the country towards financial stability and to prepare a plan for the future development of the country.

The process of setting up planning agencies to guide the country's future development has passed through several stages since 1958, when Crown Prince Fasial first gained real power as Prime Minister. However, four main stages can be identified.

FIRST STAGE: The Economic Development Committee

Following his success in the first deliberate use of fiscal policy to stabilize the government budgetary situation in 1958, Prince Faisal issued a circular (No. 7725 dated 14/5/1978 A.H) in late 1958 to initiate the Economic Development Committee to study all ministerial projects, and to prepare plans for new projects.* The Committee would also submit a preliminary report direct to the Prime

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* The Committee was composed of the Governor of The Saudi Arabia Monetary Agency (SAMA), two ecoomic advisors from the Ministry of Finance and National Economy and two others.

Minister detailing all projects which could be initiated over the following five year period. In fact this was the birth of the five year planning programme which the Kingdom subsequently set out on. All ministries and government departments had to provide the Committee with necessary reports and studies on proposed projects for examination and evaluation.

Within five months of the Committee's creation, a resolution (No. 135 dated 21/10/1378 A.H) was passed to expand the size and power of the Economic Development Committee. H. E. Ahmed Jamjoum was appointed as chairman with the rank of minister of state without portfolio, and he had authority to nominate qualified officials from different ministries to this Committee. As a result the Committee took six new members from the Ministries of Commerce, Agriculture, Education, Health, Petroleum and Communication, all of whom were of Deputy Minister or General rank.

In spite of the committee's power and independence from ministerial control, several researchers into the early period of planning in Saudi Arabia have noted that the Committee failed to properly identify needs and to establish programmes for long term development. For instance, El Mallakh (1982) pointed out that:

> "Instead of setting up the basis for economic development in Saudi Arabia, the committee occupied most of its time with specific cases most of which concerned applications for customs duty exemptions and other tariff matters." (p.141).

Because the Committee was itself dissatisfied with its progress, it proposed the format for the establishment of a more comprehensive planning organization. Upon this recommendation the government decided in 1960 to invite a mission from the International Bank for Reconstruction and Development (IBRD) to study the country's economy and to make recommendations on the best means of developing it and

organizing development programmes. After several trips throughout the country, the mission finally submitted their comprehensive report entitled "An approach to the economic development of Saudi Arabia" in May 1960. This report largely became the basis for the subsequent planning for the development of the Kingdom.

SECOND STAGE: The Supreme Planning Board

Following the recommendations of the IBRD mission on the organization of the country's development programme, the Economic Development Committee was replaced by the Supreme Planning Board in January 1961 (Royal Decree No. 50). The functions of the Supreme Planning Board, as indicated in the sixth item of the Royal Decree, were "to plan and draw up the policy of economic development amongst the various ministries and departments, supervise and follow up its execution."*

A Secretary General, nominated by the Board with the approval of the Council of Ministers, was responsible for the execution of the decisions taken by the Board and for the executive functions of planning once the recommendations of the Board had been passed by resolutions of the Council of Mininsters.

As with the Economic Planning Committee which it replaced, the Supreme Planning Board failed to achieve its main goals in spite of its greater political power. Its weak performance was largely the result of several obstacles identified in a United Nations' report in 1964 about planning organization in Saudi Arabia which led to the

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* The membership of the Board consisted of the President of the Council of Ministers (or his Deputy) as chairman, and the Ministers of Finance and National Economy, Communications, Petroleum and Mineral Resources, Commerce and Agriculture. A year after the Board's establishment the Minister of Health was included in its membership.

winding up of the Board. These obstacles can be summarized as follows:

1) There were conflicts between the role and membership of the Board. For example, budgetary review of the various ministries by the Board brought it into direct conflict with the role of the Ministry of Finance and National Economy which also reviewed ministry budgets. Similarly, the Board was supposed to study and approve development projects of various ministries even though the ministers which initiated the projects were largely the same people who reviewed them on the Board.

2) Although the IBRD mission had recommended the establishment of planning departments within various ministries, this proposal was not implemented so that coordination between the Board and ministries which lacked planning personnel was difficult.

3) There was a shortage of technical staff qualified in the field of development planning. The few trained Saudi personnel generally found more attractive positions elsewhere in the government.

4) There was a particular lack of reliable statistical information, which is essential to planning. At that time no census had been made of the population or of major economic activities. Although the Central Department of Statistics was established within the Ministry of Finance and National Economy in 1960, its first published statistics did not appear until 1965.

Discontent with the poor performance of the Supreme Planning Board led to more consultations with foreign experts. A United Nations team of socio-economic planners and the Ford Foundation were invited in 1964 to review the situation and give recommendations for improving the planning organization in the Kingdom. When the reports of

these two teams were submitted to the government in 1964, both emphasized the necessity in government for more clearly defined planning duties. Both stressed the importance of planning at the national and regional levels, with individual plans being screened and integrated into a national plan by a central planning body. They also recommended that the activities of a central planning organization should be directed towards the preparation of a national development plan. There were differences, however, in the emphases of the recommendations of the two reports. The United Nations report made recommendations largely similar to those of the 1960 IBRD mission, but when the Saudi government acted on the recommendations, elements of both sets of proposals were taken up to improve the planning machinery.

THIRD STAGE: The Central Planning Organization

The direct outcome of the recommendations of the Ford Foundation and United Nations reports was the establishment of the Central Planning Organization (CPO) in 1965 to replace the Supreme Planning Board (Royal Decree No. 9 dated 19 January 1965 in accordance with the Council of Ministers' Resolution no. 430 on 13 January 1965). The CPO was headed by a President with ministerial rank in direct contact with the King, and twelve economic advisers assisted by technical and administrative officials.

The functions of the Central Planning Organization were more clearly defined than had been the tasks of the two previous planning groups. As article four of the Royal Decree stated, the CPO had six main duties:

1) To prepare a periodic economic report about the Kingdom containing an analysis of the Kingdom's economy and showing the extent of the progress

achieved and the developments expected over the next five years.

2) To prepare economic development plans, which would be approved by the Council of Ministers before being put into effect, the first plans to be for a five year period.
3) To estimate the total capital required for the implementation of the development plans approved by the Council of Ministers. These estimates would form the basis for preparing the national budget and the budgets of independent agencies. To achieve this, the General Directorate of the Budget in the Ministry of Finance and National Economy should be in constant contact for consultation and exchange of information and facts.
4) To conduct economic studies relevant to planning matters and submitting recommendations thereon.
5) To assist ministries and independent government agencies in planning matters.
6) To submit such technical advice on planning matters as was required by the King.

In spite of these efforts to create a more effective planning structure the performance of the CPO during the first few years of its existence was poor, particularly in the technical quality of its planning. These failings are largely attributable to its limited political influence and the loss of expertise when the Supreme Planning Board was broken up. For example, on its dissolution the personnel in the Supreme Planning Board responsible for planning projects were transferred to the Ministry of Finance and National Economy, but the technical personnel were transferred to the planning departments of various ministries. The functions and staffs of the Technical Assistance and Cooperation

Department at the Supreme Planning Board were transferred to the Presidency Office of the Council of Ministers. This dispersal of staff and function weakened the power of the Central Planning Organization in the early stages of its formation.

Despite these difficulties, the CPO decided to undertake a number of planning exercises in order to enable it to start work. Firstly, it produced an economic report in late 1965 which provided a first comprehensive description of the structure of the Kingdom's economy and the pattern of its development (CPO, "An Economic Report", 1965). Secondly, in cooperation with the Ford Foundation economic advisors, the CPO produced a report in 1967 entitled "Planning for Growth" which laid out broad policy guidelines in each sector of the economy and which were later approved by the Council of Ministers. Thirdly, the CPO set up a committee of twelve deputy ministers in 1968 to foster cooperation and coordination with the various ministries in formulating specific planning targets (Council of Ministers' Resolution No. 754 March 1968).* Fourthly, the CPO increased the quality and size of its planning staffs by instituting training for its personnel. It also obtained highly qualified experts in development from abroad. In particular agreements were made with the United Nations and with the Research Institute of Stanford University to assist the CPO in increasing the quality and size of its technical staffs in order to carry out its functions more effectively.

Finally and most importantly, the CPO in 1970 laid out Saudi Arabian's First five-year development plan. The

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* The twelve deputy ministers were from the Ministries of Finance and National Economy, Petroleum and Mineral Resources, Municipal and Rural Affairs, Communications (2), Labour and Social Affairs (2), Commerce and Industry, Education, Health and Agriculture and Water Affairs (2).

general social and economic objectives of the First development plan for Saudi Arabia were:

> "to maintain its religious and moral values, and to raise the living standards and welfare of its people, while providing for national security and maintaining economic and social stability." (p.23).

The plan stated that these objectives would be achieved by:

1) Increasing the rate of growth of the gross domestic product.
2) Developing the Kingdom's human resources so that several elements of society would be able to contribute more effectively to production and to participate fully in the process of development.
3) Diversifying sources of national income and reducing dependence on oil through increasing the share of other productive sectors. (p.23).

A series of programmes and projects were laid out in the plan and a total of SR 41.3 billion was allocated to meet their costs over the five years. Table 3.7 shows this financial allocation for the various sectors of the plan. It can be seen that development projects were to take up 44.6 percent of the costs, a total of about SR 18.4 billion. Recurrent expenditures would take up the remaining 55.9 percent (SR 22.9 billion). While the defense sector received the largest share (23.1 percent) of the total plan outlays, administration, transport and communications and education all ran it a close second, each receiving about 18 percent of the total budget. The majority of the allocation for transport and communications would be spent on projects, notably road construction, whilst the bulk of the administration and education budgets were for recurrent costs. Public utilities and urban development received considerable support, especially for projects, whereas health and social affairs, agriculture, industry, and trade and services received quite small allocations. In fact the large increase in government revenues from oil in the early 1970s allowed the actual expenditures on programmes and projects during this plan period to expand by 36 percent

Table: 3.7

Financial allocation in the First development plan, 1970-1975 (SR millions).

Sector	Recurrent	Project	Total	
			Amount	%
Administration	6,794.6	922.8	7,717.4	18.6
Defense	3,980.0	5,575.0	9,555.0	23.1
Educational, Vocational, Training and Cultural Affairs	6,150.2	1,227.5	7,377.7	17.8
Health and Social Affairs	1,612.9	308.2	1,921.1	4.7
Public Utilities and Urban Development	1,246.9	3,325.4	4,572.3	11.1
Transport and Communications	1,767.3	5,709.2	7,476.5	18.1
Industry	321.8	776.7	1,098.5	2.7
Agriculture	973.8	493.9	1,467.7	3.6
Trade and Services	83.5	43.8	127.3	0.3
TOTAL	22,931.0	18,382.5	41,313.5	100.0

Source: The First development plan, 1970, p. 43.

more than the allocations orginally laid down, but this did not greatly alter the emphasis of spending.

The major projects achieved during the First development plan were the construction of 3,222 km of paved roads and 5,022 km of rural roads (earth surface roads); 1,457 new schools for boys and 1,070 girls' schools opened; 15 new hospitals established providing 2,085 new beds, and 112 dispensaries and health centres. The electricity generation capacity grew from 418 megawatts in 1970 to 1398 at the end of the plan period. About 46,000 telephone lines installed. A total of 34,388 agricultural loans were granted by the Saudi Arabian Agricultural Bank costing SR 234.4 million during the plan period.

It could be argued that, as oil revenues increased, much of the rapid economic and social development which occurred during the First plan period would have occurred even without the plan, but the plan was a useful instrument for guiding and coordinating development and concentrating resources on priority programmes and projects. Apart from launching projects, the CPO's cooperation with various ministries and departments also established the basis for more forward planning. This involved a number of important first steps which can be summarized as follows (Second plan, 1975, P.560):

1) The completion of a national transport survey and the formulation of a national plan for the transport sector.
2) The completion of socio-economic surveys and plans for the five planning regions which had been defined.
3) The formulation of a programme for human resource develoment.
4) The preparation of an initial plan for the development of the infrastructure to support industrial development in the Eastern region.

5) The production of an annual review of progress and problems related to the implementation of the First development plan and publishing an annual report on national development.
6) The establishment of a documentation centre, and the initiation of a computerized management information system to support plan management and follow up.
7) The initiation of a study to define physical constraints on plan implementation and measures to relieve them.

Nevertheless, progress was limited in some other important planning areas and two areas of weakness were identified. First, the statistical and information base for planning, and the institutional and administrative structure to support plan implementation, proved to be weak. Programme and project planning and implementation at the ministry and agency level, in particular, needed strengthening. Better short-term planning to guide budgeting for implementation of projects and programmes was also needed. Second, it was seen that better training in planning and plan implementation at the ministry and agency level was needed.

While the First plan was being implemented the CPO was preparing the Second development plan for the period 1975-1980. The broad guidelines for the plan were approved late in 1973 (Council of Ministers' Resolution No. 1464 dated 24 December 1973). Its main strategies were to diversify the economic base by expanding the agricultural and industrial sectors - areas which received little support under the First plan - at the same time as using some of the oil revenues to raise family incomes and to improve social and municipal services. Based upon these guidelines each ministry and government department throughout 1974 prepared plans for its respective sector. The Central Planning Organization then reviewed and integrated these plans into

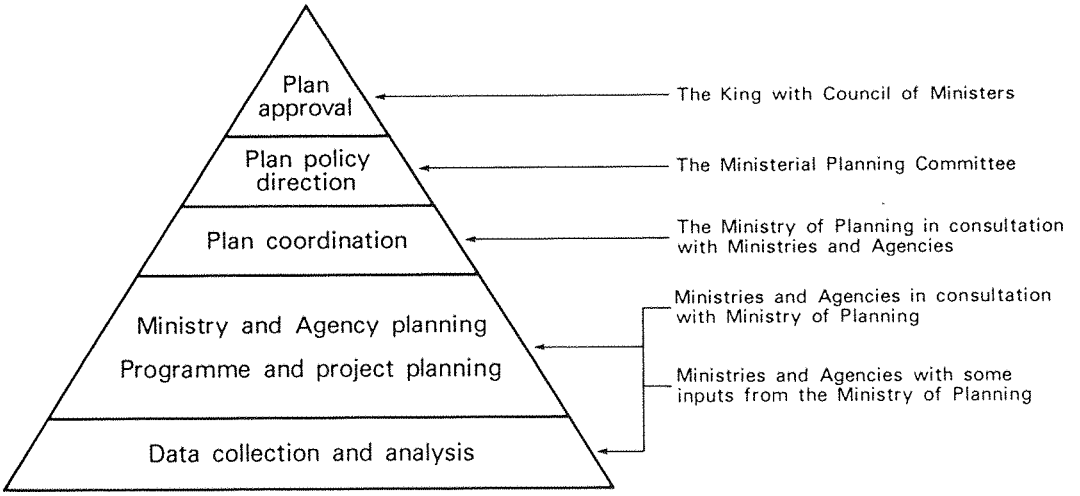
one comprehensive national plan. This became the Second five-year development plan (1975-80) which was submitted to the Council of Ministers for approval in May 1975 (Resolution No. 565 dated 21.5.1975).

FOURTH STAGE: The Creation of the Ministry of Planning

During its ten years of existence, the Central Planning Organization had made substantial progress in formulating and implementing national development plans. It had devised and seen through the First national five-year plan and laid out the Second plan. By 1975 the importance of national planning had become fully recognized so that in that year the CPO was enlarged to become the Ministry of Planning (Royal order No. A/236 dated 13/10/1975) with a main task of drawing up future five year plans.

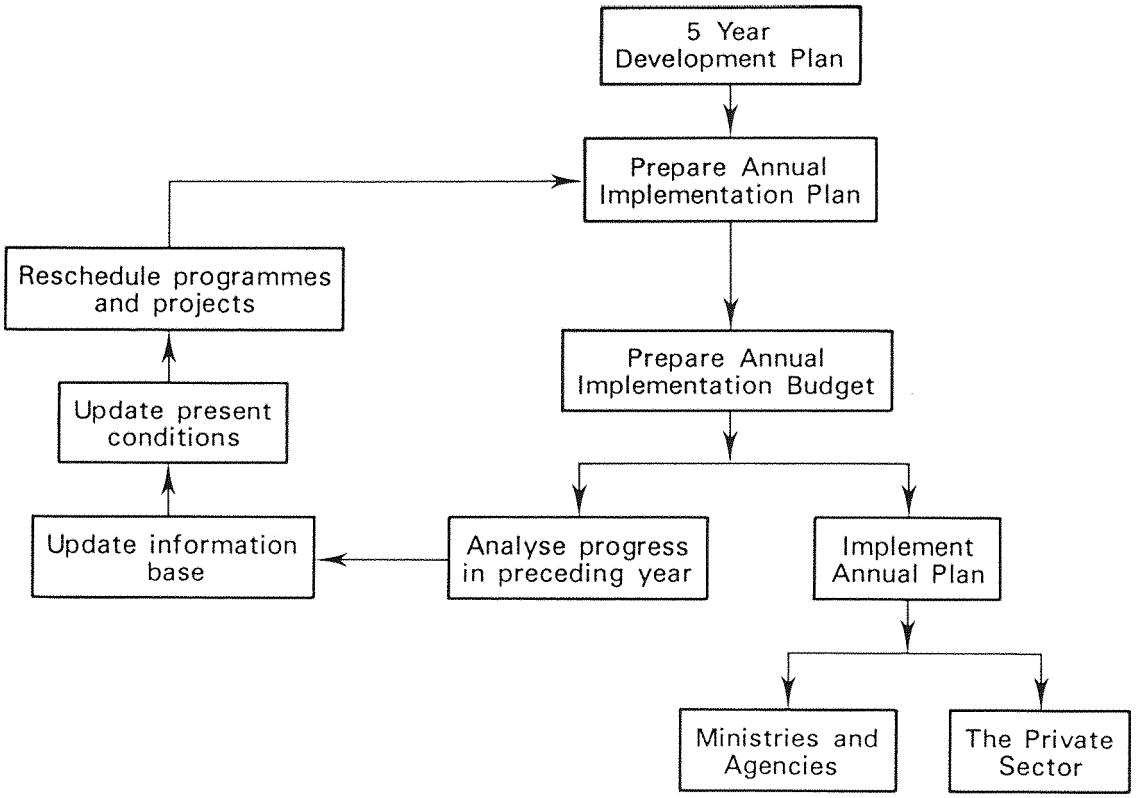
With the establishment of the Ministry of Planning the structure of national development planning was further formalized. Fig. 3.4 shows the structure of the national planning process which was created at this time and which is still employed. The process is hierachical with many inputs from different ministries and departments at the lower level and final decisions being made at higher levels. Plan preparation begins with the collection and analysis of relevant information by various ministries and government departments with some inputs from the Ministry of Planning. Each ministry and agency then draws up plans for its sector in consultation with the Ministry of Planning. At this point the Ministry of Planning, under the direction of the Ministerial Planning Committee in the Council of Ministers, becomes responsible for plan coordination and approval.

Fig. 3.5 outlines the process by which the plan is implemented under the control of the Ministry of Planning, in cooperation with the various ministries. The five year



Source: Second Development Plan, 1975, p562

Figure 3.4 The structure of National Development Planning in Saudi Arabia



Source: Second Development Plan, 1975, p.568

Figure 3.5 Plan implementation in Saudi Arabia

plan is broken down into annual programmes. These annual plans and related budgets define the detailed requirements and schedules for their implemention either by the ministries or the private sector, and allow for the monitoring of progress, and rescheduling where necessary.

The Ministry of Planning since its creation in 1975 has seen through the Second, Third and Fourth national development plans and is now working on the fifth, expected to be implemented in 1990. Basic to all of these plans has been the attempt to coordinate the social and economic development sought by the various government ministries and agencies and to diversify the economy away from its over-dependence on oil. This calls for raising the educational and other standards of the people and giving the country an infrastructure of communications and services to allow the economy to diversify. The maintenance of the nation's Islamic culture, its unity and defences are, of course, also an overriding part of each five year plan.*

The rapid increase in government revenues from oil since the early 1970s has greatly eased the development process by allowing the government to implement ever more ambitious development plans with few financial constraints. Under

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* The principal goals of Saudi development planning are summarized in the preamble to the recently completed Third plan. These were:
  - to maintain the religious and moral values of Islam;
  - to assure the defence and internal security of the Kingdom;
  - to maintain a high rate of economic growth by developing economic resources,increasing the income from oil over the long term, and conserving the depletable resources, thereby improving the social well-being of all citizens and providing the economic strength to attain all other fundamental goals of development;
  - to reduce dependence on the production of crude oil as the primary source of national income;
  - to develop human resources through education, training and raising of health standards;
  - to complete the basic infrastructure which is required for the attainment of these other goals (Third plan, 1980, pp. 3-4).

these conditions it has often been possible to avoid making decisions on spending priorities between sectors. The growth in the scale of the four development plans initiated since 1970 is shown by different sectors in Table 3.8. It shows that of the SR 1934 billion allotted in the four plans, only 2.2 percent of the total was allotted in the First plan and 21.7 percent for the Second plan. In contrast the Third and Fourth plans were much larger with 40.5 percent and 35.6 percent of the total allocations.

The data also shows that there has been a marked change in the direction of development expenditure from plan to plan. The First plan assigned major emphasis to developing the sectors covering human resources, administration and physical infrastructure. These together took 80.4 percent of the total plan outlays and included major investment especially on education, roads and government.

Under the Second development plan (1975-80) there were massive increases in expenditure in all sectors because the Plan allowed for spending at almost ten times that projected for the First plan. But it is worth noting that the Second plan greatly increased the share of expenditure on economic resources (agriculture and water, energy, mineral resources, manufacturing and commerce and services), while the share of expenditure on administration fell markedly, although in actual cash terms it still grew nearly four fold. The Second plan also introduced a general reserve which accounted for more than 15 percent of the total plan allocation. This was to cover emergency costs which are almost inevitable in rapid project development, as well as subsidies to agriculture and other sectors.

Although the Second plan was much larger in its spending than the First, the Third plan also exceeded the Second by 86 percent. Again expenditure on the productive sectors of

Table: 3.8

Development expenditures by sectors under the four development plans, 1970-1990 (SR Billion).

Development Sectors	First Plan* (1970-75)		Second Plan* (1975-80)		Third Plan** (1980-85)		Fourth Plan*** (1985-90		Total Plan	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Economic Resources	6.1	14.1	92.1	21.9	261.8	33.5	130.7	19.0	490.7	25.4
Human Resources	10.2	23.6	80.1	19.1	129.6	16.6	135.3	19.7	355.2	18.4
Social development	2.4	5.5	33.2	7.9	61.2	7.8	89.7	13.0	186.5	9.6
Physical Infrastructure	14.1	32.6	112.9	26.9	249.1	31.8	144.3	21.0	520.4	26.9
Administration	10.5	24.2	38.2	9.1	31.4	4.0	70.2	10.2	150.3	7.8
Emergency Reserves and Subsidies	-	-	63.5	15.1	49.6	6.3	177.3	17.1	230.4	11.9
TOTAL ALLOCATION	43.3	100.0	420.0	100.0	782.7	100.0	687.5	100.0	1,933.5	100.0

Note: These figures exclude non-civilian sectors.
Source: * Second development plan, 1975, P. 529.
** Third development plan, 1980. P. 88.
*** Fouth development plan, 1985, P. 72.

the economy grew faster than other sectors to allow economic diversification to occur. Government spending on industry, mining and agriculture in the economic sector increased from about 22 percent in the Second plan to about 34 percent in the Third plan. Expenditure on physical infrastructure development took about 32 percent of the total plan outlay compared with 27 percent in the Second plan. The allocations for the development of human resources, administration and social affairs dropped from 36.1 percent in the Second plan to 28.4 percent under the Third plan. Even so only spending on administraton took a real cut.

The Fourth development plan intended to devote the main shares of expenditure to physical infrastructure development, followed by economic and human resources development. But the current plan is rather less ambitious than the Third plan. As a result of the fall in world oil prices in the 1980s the total financial allocations to the civilian programmes and projects in the Fourth development plan (1985-90) amounted to about 14 percent less than the allocation for the Third plan. It was clear that the speed of development would now slow down. Even then these allocations proved too ambitious as oil prices remained weak. The first annual budget of the Fourth plan in 1986 estimated that total revenues would be 23 percent less than the previous year's budget because of a 28 percent fall in oil incomes (SAMA, 1986) so that some of the programmes of the current plan have been scaled down or delayed. Subsequent budgets have also lowered investment targets and decreased planned growth rates. The emergency reserves have been greatly enlarged to allow for this uncertainty.

In spite of these recent problems the period covered by the development plans has seen significant achievements in the economic, social and physical development of the

country. Infrastructure development between 1970 and 1985 has been impressive. For example, the paved road network expanded from about 8,000 km to more than 30,000 km; the number of working telephone lines rose from 29,000 to 903,000; more than half million housing units were built, mostly financed by government loans to the private sector; installed electricity generating capacity rose from 418 megawatts to 14,578 megawatts; desalination plants increased their water output from about 19,600 cubic meters per day in 1970 to 1.44 million cubic metres per day in 1985 and the overall handling capacity of ports increased from about 2 million tons in 1970 to about 50 million tons in 1985.

The start of economic diversification implied in the plans is seen in several indicators. The production of wheat, now the staple food, grew from 130,000 tons in 1970 to over 1.3 million tons in 1985, while the more traditional staple, dates, roughly doubled in production; domestic production of fertilizers rose from 24,000 tons to more than 850,000 tons to help support agricultural expansion; cement production increased from about 700,000 tons in 1970 to more than 8 million tons in 1984.

There was massive educational development to greatly reduce levels of illiteracy and also to provide higher levels of education for a small but increasing proportion of the young population. School enrollment for boys and girls increased by 192 percent at the elementary level, 375 percent at the intermediate level, and 712 percent at the secondary level. By these means the school population increased from around 597,000 in 1970 to over 2 million in 1985; the annual output of male university graduates rose from 808 in 1970 to 6,098 in 1984. Female graduates increased from only 27 to 3,284 over the same period.

Health development has mainly centred on the creation of

a network of hospitals. Thus hospital beds increased from 9,039 to 30,959 between 1970 and 1985, while the number of doctors in the country rose from 1,127 in 1970 to 16,969 in 1985.

3.4 REGIONAL DEVELOPMENT PLANNING

With three of the development plans completed and the fourth currently being implemented, Saudi Arabia has established the foundations for an effective national development planning system in which the plans have set the pace and pattern of the Kingdom's development. In spite of initial difficulties it could be argued that the plans have helped established social and economic goals and priorities for each ministry and created a means of allocating resources and coordinating economic activities. But one weakness in the planning system is obvious. The national planning system contains no formal provision for regional planning.

The United Nations and Ford Foundation missions who visited the Kingdom in 1964 to review the national planning organization recommended the establishment of a government department in each region to stimulate local development possibilities, and to coordinate the activities of the various government ministries and agencies when setting up projects and programmes in the regions. This recommendation was not acted upon. Instead each central ministry set up regional branches to carry out its national policies in that area. This approach has two major drawbacks. First, these regional branches generally have no real decision-making power and only ensure that national policy is applied regionally. With powers to implement decisions taken centrally, one finds that some regional branches are more

active than others in ensuring that their region gets its share of ministry investment. As a result considerable variations can be found in the degree of development carried out by ministries in different regions. Secondly, these regional imbalances are increased by the different regional subdivisions of the country adopted by various ministries instead of the five planning regions created by the Ministry of Planning. In some cases, for example, Asir forms part of the Southern region. In other cases it is a region in its own right.

One of the basic strategies of the national development plans has been to achieve the equitable distribution of wealth and welfare among all sectors of the population and between the country's regions. Interregional variation in the provision of social and physical facilities has, however, become a serious problem in the development process.

Saudi Arabia is not alone in confronting this problem within its national development programme, but it could be said that regional planning is a major problem is Saudi Arabia because of the diversity of the country and the scale and speed of its development. The identification of the region as a fundamental planning unit, with its specific features and economic problems which require special treatment, has led to the recognition of the field of regional planning as a distinct discipline with its own methodology (Waterston, 1969). Glasson (1978) for example, has defined regional planning "as a response to certain problems with a regional dimension, that is, a response to pressing regional issues"(p.24). In particular, regional development planning has been seen as a major instrument for the proper provision of public facilities to suit the pattern of settlements and the level of economic development

of a region.

The first tentative steps towards a more regional approach to planning in Saudi Arabia, alongside the highly centralized sectoral system, were taken in the early 1970s by the Ministry of Planning during the implementation of the First plan (1970-75). The Ministry signed several contracts with consultancy firms to undertake regional development planning studies, so called socio-economic studies, for the five planning regions of the Kingdom as a part of the formulation process for the Second development plan. Partly as a result of what was learned in these socio-economic studies, the Second development plan (1975-80) incorporated a broad scale regional development objective. It stated that national development would be fostered by encouraging the

> "wide distribution of productive investment based on the distinctive physical and human resources of each region, and social programmes applied in accordance with need, thereby extending the benefits of national development to all sectors of the population." (Second plan, 1975, p. 58).

About the same time various other regional studies commissioned by the ministries, notably the Ministry of Municipal and Rural Affairs, pointed to significant regional inequalities.

In spite of this concern for regional development implied in the Second development plan, no statement was made about priorities for development within and between regions. Each region has different socio-economic characteristics which need special consideration, but it can be argued that the regional development input into the Second plan lacked sufficient clarity to be economically efficient or socially beneficial. As a result massive expansion in government allocations for development in the regions occurred during the Second plan, but these were not based on clear regional development policies. This was

mainly due to two reasons. Firstly, the regional aspects of the Second plan were at best marginal to the overal sectoral direction of the plan. Each ministry concentrated on national projects to promote their sectors of the economy with little regard to regional impacts. Secondly, development has tended to be concentrated in the rapidly expanding large urban centres of the country which are found in some regions, with little attention to the small urban centres and rural areas which characterize other regions.

As the regional disparities resulting from broadscale national planning become more obvious, the need for more regional planning grew. A select committee of the Council of Ministers in 1978 stressed this development when it noted:

> "the government's commitment to assist the regions, and especially rural areas, to develop productive activities which would enable them to retain as many of their inhabitants as possible, to extend the distribution of services, and to help the local communities in accordance with the principles of Islam." (Third plan, 1980, p. 59).

In spite of a growing realization of the need for a more clear cut regional approach to planning, new proposals, strategies and programmes for regional development did not appear until the publication of the Third development plan in 1980. The Third plan stressed the importance of a more explicit and coordinated approach for dealing with the regional dimensions of national planning. The plan contained clear regional development objectives in terms of assisting all regions, particularly rural areas, to increase the productive activities and to raise the standard of living, wealth and welfare by extending the distribution of public services. The specific regional development goals of this plan were:

1) The coordination of activities, projects and programmes of ministries and other development agencies with regional or district geographic responsibilities.
2) The more equitable distribution of socio-economic opportunities and wider access to public services in

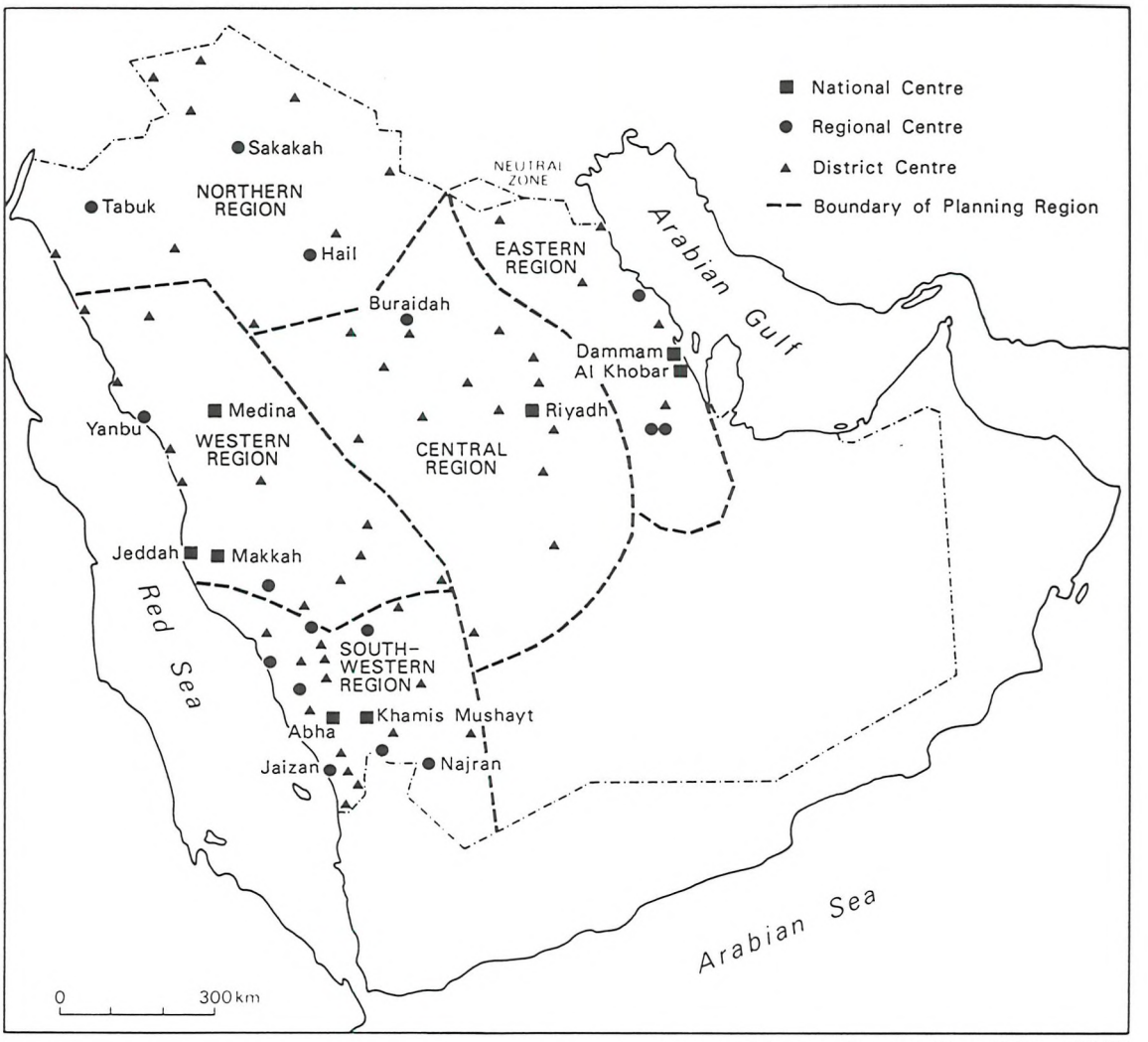
line with the promotion of productive activities and individual initiative.

3) The provision of a development framework, for the design and implementation of policies and programmes in all regions, especially the rural areas. (p. 108).

These objectives implied a balanced form of regional development, taking the benefits of national progress more or less equally to all areas. To achieve this type of regional development, changes were needed in the development agencies which had guided the earlier plans and which now had to tackle regional disparities. As a result the Third plan introduced a system of national, regional and district centres to achieve better coordination of development services. This system of "development service centres" was considered "the best method of both stimulating development activities, and aiding the most deprived sections of the population." These centres would "stimulate the provision of development facilities in selected areas which will support productive enterprises" (p. 108).

A total of 77 service centres were designated under the Plan in the form of a hierarchy including eight national, sixteen regional and 53 district centres spread throughout the five regions. The location of these centres is shown in Fig. 3.6 while Table 3.9 lists their allocation to the five planning regions. It can be seen that the Southern region had the largest number of designated centres, with 23 to try to meet the needs of its large rural population, while the Western and Central regions had sixteen each. The less developed Northern and largely empty Eastern regions had the fewest number of designated centres at twelve and ten each. Rather surprisingly the adjacent towns of Abha and Khamis Mushayt in Asir were selected as two of the eight national centres. The Southern region also received seven regional centres, more than any other region.

This system of development centres soon proved to be



Source: Third Development Plan, 1980, p.XXXV

Figure 3.6 The development of Service Centres in Saudi Arabia as proposed by the Third Development Plan

inadequate to provide local foci for a comprehensive policy to tackle the regional disparities. There were several reasons for this. Firstly, identifying even this number of centres from which to propagate regional development could not provide reasonable public access to services by all sectors of the population, when the population is so widely scattered across the different regions. There are more than 10,000 villages and hijar in addition to large numbers of nomads in the Kingdom. Most of those would still remain largely inaccessible to services provided at these centres.

Table: 3.9

Regional distribution of development service centres as proposed by the Third plan, 1980.

Region	National	Regional	District	Total
Central	1	1	14	16
Western	3	2	11	16
Eastern	2	3	5	10
Southern	2	7	14	23
Northen	-	3	9	12
TOTAL	8	16	53	77

Source: Figure 3.6.

Secondly, the designation of development centres has done little to prevent the increased polarization of development towards the urban centres of the country. One objective of the Third plan was "to avoid overconcentration of resources in a few urban enclaves, which may be to the detriment of the rest of the Kingdom" but all that the concept has achieved is a limited degree of development away from a few large urban centres to a rather larger number of smaller centres.

A third weakness of the policy has also been its failure to relate regional development to the needs of particular

regions. For instance, the Southern region is dominated by large numbers of villages and rural communities, mostly engaged in agricultural activities and with an inadequate provision of even basic social and infrastructural facilities like clinics and schools as well as higher level services. Thus, its development needs are different from the Western region which is dominated by a few large urban centres with diversified economies. But these differences are inadequately accounted for simply by the provision of development centres.

Finally, and especially important to a rural region like Asir, development service centres were intended to provide only the more specialized facilities to encourage growth in a region, such as hospitals, central administration and colleges. Specifically excluded was the provision of:

> "the normal municipal services (electricity, water, sewerage, roads, elementary and intermediate schools, local cooperatives, local agricultural improvement services, and so forth). These municipal services will continue to be provided as previously; and no changes in the administrative arrangements for their provision are foreseen." (p. 109).

But it could be argued that it is these basic village and municipal services which are in fact the most urgently needed facilities in most rural areas. It could be their absence which prevents the rural areas developing in a similar way to the urban centres which have electricity, roads and other basic infrastructure. To counteract the effect of the absence of basic municipal services in rural areas, the Ministry of Municipal and Rural Affairs did introduce a policy of "village clusters" at the regional level in 1976. By this policy it aimed to identify significant clusters of villages in an area which could be treated as a group for the provision of municipal services. However, by 1985 only 45 village clusters had been

municipalized. In spite of their small number Al-Muqbel and Al-Shahyel (1984) have noted that the performance of these village clusters in developing their areas has been very poor. The performance of the municipalization of village clusters in the writer's case study area will be examined in a later part of this thesis.

Because of the recognition of the particular problem of fostering development in the rural areas, the Council of Ministers issued a Resolution (No. 3 dated 1/1/1403 A.H) in October 1982 to encourage village development in the Kingdom. This gave the Ministry of Municipal and Rural Affairs additional responsibility for formulating and coordinating programmes for developing the social and physical facilities of the kingdom's rural areas. Under article two of the Resolution a general committee charged with overall responsibility for planning, coordinating and supervising the development of its rural areas was to be established in each province.*

Article four of the same Resolution called for the establishment of local committees in each province, under the supervision of the Ministry of Municipal and Rural Affairs to supervise and coordinate local development, and to encourage the local inhabitants to participate in the development of their areas. The writer has been unable to obtain any information either in Riyadh or in his field area on the work of these committees.

Despite the recognition in earlier plans of the need for, and problems of pursuing a policy of integrated rural development the current Fourth plan (1985-90) has not

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* Each committee is headed by the governor of each province, with regular members from the Ministries of Municipal and Rural Affairs, Education, Health, Agriculture and Water, Labour and Social Affairs, Transportation, and the General Presidency for Girls' Education.

attempted to develop a more explicit and coordinated approach to the regional rural problem than occurred in the Third plan. While stressing again the importance of regional development policy in achieving balanced development, the Fourth plan has simply adopted the sectoral regional development approach of the Third plan together with the system for designating village clusters to extend the provision of basic services to rural areas. At this point in time, therefore, the nation still lacks an adequate regional development policy to properly distribute social and physical facilities to the various region of the country, and to promote their development.

3.5 REGIONAL DEVELOPMENT OF PUBLIC SERVICE PROVISION

The provision of a wide range of basic services such as education, health and municipal facilities to all sectors of the population is a recognized objective of the Kingdom's national development plans. For instance, the Third plan (1980-85) stated that "the concept of social development has always been comprehensive in Saudi Arabia's development." The aim of social development was to "bring about sustained improvement in the well-being of the individual, bestowing the benefits of economic growth on all, and stimulating the participation in and contribution of citizens to development." (p. 343).

In general, it is clear that there has been substantial progress in the provision of public services in the Kingdom during the last fifteen years. The investment in social and physical facilities under the national plans increased from SR 26.7 billion under the First plan to about SR 440 billion under the Third plan, a 15 fold increase. All regions and districts have benefited but the rate of progress has led to

large variations between the country's region and between rural and urban areas in the development of public services. This problem has been frequently commented on by the government agencies and other researchers. Al-Ibrahim (1982) in his study of regional and urban development in Saudi Arabia pointed out that:

> "Public investment in social and physical overhead capital is not evenly distribution among regions and between rural and urban areas. There is evidence to suggest that some regions, namely the Central, Western and Eastern, have more adequate access to transport and communication networks, municipal services, housing, electricity, water supply, sanitation, health and education."(p. 150).

The Fourth development plan (1985) recognized the problem when it stated that:

> "The Central and Western regions (which include the largest urban centres) are considered the most diversified regions and also enjoy the highest level of service provision..... In particular, the Northern and Southern regions were losing population to other more prosperous parts of the country, including the Central and Western regions." (pp. 420-421).

It is appropriate to consider these broad regional disparities first and to look at them in the fields of education, health and municipal services which are the particular concern of this thesis. The educational level of the population is a very important indicator of the level of development in any country or region. In Saudi Arabia considerable progress has been made in making education accessible to the majority of the population, no matter where they live. In quantitative terms the number of boys' schools (including elementary, intermediate and secondary levels) increased from 1,945 in 1970 to 6,202 in 1985, an increase of 219 percent, while enrollment in them rose from 347.4 thousand in 1970 to more than one million. Female education, which has traditionally lagged behind, has also made impressive progress in this period. The number of elementary, intermediate and secondary schools for girls

increased from only 375 in 1970 to 4,154 schools in 198 5. Their enrollment grew from 135,542 students in 1970 to about 711,000 in 1985, an increase of 425 percent. The number of girls in school is still less than for boys but the traditional gap between schooling for boys and girls has been reduced. Despite this progress and the government commitment to continue to expand the provision of education services to all areas of the country, education even at the primary level is not yet compulsory, although the Fourth Plan has made this a priority objective. It has not yet been possible to require all children to attend school because schools do not yet exist in many areas. This is one effect of the considerable differences in the level of social provision across the country as well as the problems of providing schools for even the smallest and most scattered communities.

One of the difficulties of studying educational services in Saudi Arabia, particularly at the regional level, is the lack of data. There is no data available on school enrollment rates by age group, which would show the relative access to school services by regions. Nor is recent regional census data available on the demographic make-up of the country to determine the size of the school age population in each region. However, Table 3.10 shows the regional distribution of boys' schools and boys' enrollments in primary, intermediate and secondary schools. This provides a crude indication of the regional provision of these types of education. In 1985, there were 4,404 boys' primary schools provided by the Ministry of Education. From Table 3.10 it can be seen that the Western region with 30.8 percent of the total schools, the Southern (27.0 percent) and the Central (25.2 percent) had the highest shares of these schools, while the Eastern and Northern regions had the lowest. As is

Table: 3.10

Regional distribution of boys' primary, intermediate and secondary schools and enrollments, 1985 (percentage).

Region	Population	Primary		Intermediate		Secondary	
		Schools	Students	Schools	students	Schools	Students
Central	23.5	25.2	24.7	25.1	24.2	25.5	25.2
Western	33.9	30.8	35.6	29.7	36.3	29.3	37.3
Eastern	11.3	7.0	13.6	11.0	15.7	11.8	16.0
Southern	21.1	27.0	18.5	25.1	16.4	21.6	13.8
Northern	10.2	10.0	7.6	9.1	7.4	11.8	7.7
Base Totals	11,290,331	4,404	727,360	1,330	219,553	467	88,138

Source: Compiled from data published by the Ministry Of Education, Educational Development Data Centre, 1986.

to be expected from this, these leading regions for schools also had the major share of enrollments. The Western region was the clear leader with 35.6 percent of the nation's primary aged boys in schools. Of the other leading regions the enrollment in the Southern region lagged (at 18.5 percent) because many schools in that region were very small to cater for small village communities. Table 3.10 also shows the percentage of the national population in each region in 1985. If one assumes that the proportion of the regional population which is primary school aged boys is the same from region to region a comparison between the regional share of population and school enrollment suggests that enrollments in the Central, Western and Eastern regions are higher than in the other regions. The Southern and Northern regions, with 21 and 10 percent of the Kingdom's population, have only 18.5 and 7.6 percent of the total boy students in the country's primary education.

This imbalance between enrollment levels across the regions is also suggested by the data for intermediate and secondary enrollments shown in Table 3.10. The percentages of national enrollment at these levels increase over the primary levels in the Central, Western and Eastern regions, but remain level in the Northern and decline in the Southern region. This again suggests that a smaller proportion of boys are getting post-primary schooling in the Southern and Northern regions than in the other regions.

The same regional imbalance is suggested by the pattern of school provision and enrollment of girls in 1985 shown in Table 3.11. If anything it reveals an even more pronounced imbalance between the Central, Western and Eastern regions on the one hand and the Southern and Northern regions on the other. The Southern region, which had more than 21 percent of the total population in 1985, had only 15.8 percent of

Table: 3.11

Regional distribution of girls' primary, intermediate and secondary schools and enrollments, 1985 (percentage).

Region	Population	Primary		Intermediate		Secondary	
		Schools	Students	Schools	Students	Schools	Students
Central	23.5	27.4	25.7	28.4	29.0	32.0	32.2
Western	33.9	28.3	35.4	33.9	39.7	31.0	39.0
Eastern	11.3	10.0	14.4	13.5	16.5	19.0	18.1
Southern	21.1	24.5	15.8	15.7	8.6	9.2	5.0
Northern	10.2	9.8	8.7	8.5	6.2	8.8	5.7
Base Totals	11,290,331	3,075	513,227	785	132,591	294	65,090

Source: Compiled from the Third Statistical Book, The General Presidency For Girls' Education, 1985.

the total girls in the country who were in primary education. The percentage is even less with respect to intermediate and secondary schooling, with 8.6 and 5 percent respectively. A similar pattern of low enrollments is seen in the Northern region. In contrast, the proportion of the national enrollments in the Central, Western and Eastern regions is higher than their shares of the total population would indicate. For both boys and girls, the Southern and Northern regions appear to have a smallar proportion of the relevant age groups at school than other regions and fewer go on to post-elementary education.

Further confirmation that educational levels lag in the Southern and Northern regions can be found in data on illiteracy. Adult illiteracy is very common because the school system has only expanded recently. Table 3.12 shows the regional illiteracy rates for males and females aged ten years and over in 1974. As is to be expected the illiteracy rate among females (79 percent) is much higher than among males (54 percent), but of more interest here are the regional variations. The Eastern region had the lowest illiteracy rates for males and females, followed by the Central and Western regions. In contrast rates of illiteracy were much higher in the Southern and Northern regions, indicating the much lower levels of schooling in those regions, both in the past and up to the present. Of course the recent rapid expansion in school provision in all regions will help to eradicate this discrepancy in the future but since the Southern and Northern regions still clearly fall behind in school enrollments at all levels, problems of illiteracy and lack of skills could remain a problem for many years in these regions.

It is also clear that large disparities occur within regions, particularly between rural and urban areas, in

access to schooling and in the quality of educational facilities, such as teachers with particular skills, buildings and equipment. Most technical and vocational training, teachers, colleges, institutes and university education are confined to the main urban centres, particularly in the Central, Western and Eastern regions, reducing opportunities to higher education in the more rural regions.

Table: 3.12

Illiteracy rates for males and females aged ten years and above by region, (percentage).

Region	Males	Females
Central	44.9	73.4
Western	49.5	74.5
Eastern	42.5	63.3
Southern	64.9	94.3
Northern	66.2	90.6
TOTAL	53.6	79.2

Source: Sirageldin, 1984, p. 42.

If development planning has not adequately dealt with the problem of regional disparity in educational provision, the problem is even more apparent in the field of health care. Saudi Arabia has a long-standing policy of providing health care services to all citizens free of charge. All of the national development plans have emphasized the importance of medical provision to the social and economic development of the country. For example, the main goal for the nation's health services in the Fourth plan (1985-90) was:

> "The provision of high quality health services and facilities in all regions of the Kingdom, so that the population can have access to the required health care services." (p. 61).

The provision of public health services in the Kingdom is the responsibilty of the Ministry of Health which provides the majority of health facilities in the country. But other agencies, in addition to the private sector, provide health services for their employees and segments of the general population. These other agencies include the military, the Red Crescent Society, school health units and the universities.

Considerable improvement and expansion of the basic infrastructure of health facilities has occurred during the implementation of the national development plans. There are many ways of measuring this enormous expansion. In the First development plan (1970-75), the financial allocation for the Ministry of Health was SR 1,297 million or 3.1 percent of public sector investment under the plan. The allocation for health rose to SR 43,593 million under the Third plan (1980-85), an increase of 30 fold, and representing about 6 percent of the public sector investment under that plan. Expressed in terms of facilities it meant that the number of hospitals run by the Ministry of Health increased from 47 in 1970 to 105 in 1985 and the number of beds in these hospitals increased from 7,165 in 1970 to 20,796 in 1985, an increase of 190 percent. The numbers of primary health care centres rose from 519 in 1970 to 1,306 in 1985. Large increases occurred in the number of medical staff. For instance, the numbers of physicians rose from only 789 in 1970 to 9,257 in 1985. The numbers of nursing staff increased from only 2,253 in 1970 to 20,707 in 1985. As a result of these impressive rates of growth the doctor:population ratio improved from 1:1493 in 1975 to 1:665 in 1985 although not all of these were Ministry of Health doctors.

Despite these great improvements, the coverage and

effectiveness of health care services have not yet reached optimal levels. As the Third development plan stated in 1980 that:

> "The health of the nation is not yet satisfactory, with high rates of infant mortality, malnutrition, and serious diseases. Furthermore, the health servicesare not yet extensive or comprehensive enoughto fulfill all needs for health care."(p. 58).

In these early years of development of a health service the Ministry of Health has given priority to the expansion of health facilities in the major urban centres of the country, particularly in the Central and Western regions where most of the major cities are located. But this has meant that the aim of providing an equitable distribution of public health facilities in the country has been put aside in order to improve facilities more quickly for that part of the population which is easier to serve.

Table 3.13 indicates the extent to which the health facilities under the authority of the Ministry of Health are unequally distributed across the regions of the country. On most indicators, including numbers of hospitals, hospital beds, physicians, nurses and technicians, the Central and Western regions enjoy a greater share of facilities and staff than the other three regions. Together the Western and Central regions with 57 percent of the nation's population have 67 percent of the total hospitals in the country, 71 percent of beds, 67 percent of physicians, 65 percent of nursing staffs and 63 percent of technicians. The Southern and Northern regions have the poorest level of provision. They have 32 percent of the Kingdom's inhabitants, but only 23 percent of the Ministry of Health's hospitals, 19 percent of beds, 22 percent of physicians and 23 percent of nursing staffs. Only in the regional distribution of primary health care centres do the Southern and Northern regions appear more favourably treated than the other regions and this is

Table: 3.13

Regional distribution of public health services, 1985, (percent).

Region	Population	Hospitals	Beds	Health Centres	Physicians	Nursing Staff	Technicians
Central	23.5	27.7	25.0	23.9	28.4	26.8	25.7
Western	33.9	39.1	46.3	28.3	38.4	38.3	37.3
Eastern	11.3	11.4	9.4	10.5	10.9	11.3	11.5
Southern	21.1	16.2	11.7	27.0	15.9	17.5	19.1
Northern	10.2	7.6	7.6	10.3	6.4	6.1	6.4
Base Totals	11,290,331	105	20,796	1,306	9,257	20,707	10,086

Source: Compiled from the Annual Health Report, Ministry of Health, 1985.

largely to compensate for having a more scattered rural population which is more difficult to serve with hospitals. Even so primary health care centres still play quite a minor role in health provision.

These inequalities in the regional distribution of health facilities imply considerable differences in the quality of health care offered by different types of hospitals and health centres, although these inequalities are much more difficult to quantify. Generally one would expect the large hospitals found in the major urban centres would be better equipped and better staffed. Al-Rawwaf (1980) has noted that:

> "a hospital in a small eastern or southern town is not comparable to a hospital in Riyadh or Jeddah, which is much larger and more sophisticated than those in rural areas. Most rural hospitals, as a matter of fact, are not equipped to perform operations, but are more accurately described as first aid centres." (P. 458).

One indicator of the regional variations in the quality of health care are ratios of medical staff to population as shown in Table 3.14. The levels of provision revealed are good compared with many developing countries, but are much poorer in some regions than other. The Table shows that the population in the Eastern, Western and Central regions are much better served by health facilities than the Southern and Northern regions. It must also be remembered, however, that these data are for large regions within which the rural areas will be much less well served than the urban centres.

The unevenness of the regional distribution of health services is further aggravated by the fact that many major health facilities in the country are not under the authority of the Ministry of Health and that most of these are found in the Central and Western regions. They include facilities such as the King Fasial Specialist Hospital and the King Khaled Specialist Eye Hospital, both in Riyadh, the various

hospitals of the Ministry of Defense, the National Guard and National Security, and the teaching hospitals of the Universities in Riyadh, Jeddah and Al Khobar.

Table: 3.14

Regional distribution of health service personnel and beds per population, 1985.

Region	Population Per		
	Physician	Nursing Staff	Bed
Central	818	422	472
Western	799	386	329
Eastern	682	279	372
Southern	1,462	626	979
Northern	1,736	834	683
TOTAL	926	435	455

Note: Includes the Ministry of Health and the private sector health services. Population based on the 1985 estimate by the Ministry of Planning.
Source: Compiled from the Annual Health Report, Ministry of Health, 1985.

The private health sector also plays an important role and has rapidly expanded in the last few years. Again few private medical facilities are found in those regions - the Southern and Northern - which also lag in the provision of government facilities. Between 1981 and 1985 the number of private clinics and the number of physicians working in the private health services approximately doubled. The number of beds in private hospitals increased by nearly 50 percent in the same period. These large increases in the private health services have been encouraged by considerable government subsidies following one of the health sector objectives in the Fourth development plan "to continue encouraging the expansion of private health care programmes and promote private sector participation in all health sector services" (p. 329). But, as Table 3.15 shows, few of these private

facilities are found in the Southern and Northern regions since it is more profitable for the private health sector to operate in the major urban centres which are found in the other regions. Half of the nation's private hospital beds are located in the Western region, while none are located in the Southern. The Western, Central and Eastern regions have 92 percent of the physicians working in the private sector. In contrast there are no more than 160 private doctors in the whole Southern region.

Table: 3.15

Regional distribution of health facilities in the private sector, 1985 (percent)

Region	Hospital	Clinic	Beds	Doctors	Nurses
Central	12.5	33.9	10.7	21.2	14.4
Western	60.0	31.7	49.3	41.8	37.5
Eastern	20.0	17.9	37.0	29.3	42.6
Southern	-	12.0	-	5.4	3.2
Northern	7.5	4.0	3.0	2.3	2.3
Base Totals	40	224	3,993	2,942	5,257

Source: Compiled from the Annual Health Report, Ministry of Health, 1985.

The provision of municipal facilities such as local roads, sewerage and water networks and local public buildings is an essential element in developing a nation's infrastructure, The Ministry of Municipal and Rural Affairs (MOMRA) has overall responsibility in Saudi Arabia for the provision of these facilities and providing funds to local areas to run these services. Thus the way in which MOMRA decides to allocate funds for projects has a profound impact on the regional development of the country. As a result of the rapid growth of the Kingdom's economy since the 1960s, the expansion of the major urban centres, particularly

Riyadh, Jeddah, Makkah and Dammam, created a demand for municipal services and improved infrastructure in the towns. This is reflected in the heavy government spending on municipal services in each of the five year plans. For instance, the total allocation for municipal facilities and services during the First plan (1970-75) represented 20.7 percent of the total budget for physical infrastructure development in the Plan. Under the Second plan (1975-80) the total allocation for municipal development rose by 18 fold to 47.2 percent of the total investment on planned physical infrastructure development. Under the 1980-85 Plan, the government allocation for municipal and residental infrastructure doubled again. Again it represented more than 40 percent of the total outlay for planned infrastructure development.

The provision of municipal services to the large urban centres has taken most of this funding. For example, between 1965-73, about 63 percent of the central funding for municipal services went to the six largest cities of Riyadh, Jeddah, Makkah, Madina, Dammam and Taif (Al-Rawaf, 1980). This still leaves many of these services underfunded and incapable of meeting the needs of those cities. Meanwhile the municipal needs of the smaller towns and rural areas have been almost entirely neglected.

With the large cities found only in the Central, Western and Eastern regions the reasons for the regional inequalities in the provision of funds for municipal services between 1984 and 1986 seen in Table 3.16 become clear. Total government spending through municipalities on projects such as water supply networks, sewerage, storm rainwater drainage systems, asphalting and lighting of roads and construction of parks and recreation areas amounted to SR 33,430.6 million during the three years of 1984-86. The

Table shows that three quarters of this money went to the Central and Western regions and, in effect, to Riyadh and Jeddah.

Table: 3.16

Regional distribution of government expenditures on municipal public utility projects between 1984 and 1986, (SR Million).

Region	Total Project Allocation	Percent
Central	12,059.7	36.0
Western	12,697.0	38.0
Eastern	6,557.8	19.6
Southern	799.2	2.4
Northern	1,326.9	4.0
TOTAL	33,430.6	100.0

Source: Saudi Arabian Monetary Agency (SAMA), Annual Report, 1986, p. 141.

In contrast, expenditure on municipal services provision amounting to only 4 percent of the total went to the Northern region and 2.4 percent to the Southern region. These low levels of municipal expenditure in these regions mainly reflected the absence of large towns there and the very limited spending in smaller towns.

Table 3.17 indicates the number of projects proposed during the Third development plan period by region to provide some further explanation of the inequalities shown in municipal spending between the regions with large urban centres and the Northern and Southern regions which only have small towns. It can be seen that across most of the types of projects funded the Western, Central and Eastern regions took a greater share than their population would suggest they should have, whereas the Southern and Northern regions took less. For example, in the case of municipal road projects, where over 8,500 km were planned, the

Table: 3.17

Regional distribution of municipal projects proposed during the Third development plan, 1980-85 (percent).

Type of projects	Total Projects	Cent.	West.	East.	South.	North.
Percent of total population	-	23.5	33.9	11.3	21.1	10.2
Roadworks projects (km)	8,503	27.1	33.5	14.4	14.5	10.5
Water supply networks (users)	719,600	10.1	53.7	15.4	11.5	9.3
Sewerage connection (users)	472,600	20.1	28.2	35.8	9.2	6.7
Sewage treatment (cubic m)	626,900	43.4	41.2	2.5	7.7	5.2
Stormwater protection (km)	157	22.9	49.7	2.5	12.1	12.8
Stormwater drainage (million of population benefiting)	2.3	31.0	32.2	27.0	4.4	5.4
Building projects	885	15.3	49.2	11.9	14.5	9.1

Source: Third development plan, 1980, pp. 445-447.

Southern and Northern regions received only 25 percent of these projects although they possess 31 percent of the country's population.*

Water supply projects were planned to serve nearly 720,000 households, under the Third plan. 54 percent of them were located in the Western region which has 34 percent of the population. Again the Southern regions was poorly provided for with 11 percent of the planned connections even though it had 21 percent of the country's population. The low level of connections in the Central region largely results from the progress in water supply connections already made before 1980. In the case of sewerage connections and treatment works, the Central, Western and Eastern regions clearly lead over the Southern and Northern regions.

As has been pointed out most of the projects were concentrated in the Central, Western and Eastern regions where the large urban centres are found. As in the Third plan, the earlier plans paid no attention to the particular municipal service needs of the populations in the small towns and villages. In 1984 for example, only 27 percent of the Kingdom's villages benefitted from even some form of basic municipal services, leaving 7,640 villages totally without services like piped water supplies and improved roads. It was not until the Third and Fourth development plans that significant disparities between urban and rural areas in the provision of municipal facilities and services was recognized as a problem. Only very recently have some municipal services been provided to villages under the Fourth plan.

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* In fact only about 18 percent of all municipal road projects were allocated for rural areas despite the great needs of rural population to reduce remoteness from local services.

Table 3.18 shows the regional distribution of villages served by some municipal services. Municipal services are provided to villages in two ways: through being part of a municipality centred on a nearby town, and by the creation of the village cluster for municipal purposes. Only 10.8 percent of all the villages in the country received their municipal services from the nearest municipality in 1984 because most villages are remote from towns. By 1984 another 1663 villages (15 percent of the total) received some municipal services by becoming part of 43 village clusters as can be seen in Table 3.18. The largest percentages of villages served under either of these municipal arrangements were in the Eastern and Central regions with over 60 percent of their villages benefitting, followed by the Northern region with about 36 percent of its villages served. On the other hand the Southern and Western regions, which have the largest share of the country's villages, have the lowest ratio of villages benefitting from municipal services, with 23.1 percent and 13.4 percent respectively. The low proportion of villages served by municipal services in these two regions partly results from the scale of the problem of providing services to so many small places. It must also be noted that despite the limited number of villages receiving municipal services and facilities in the Kingdom, the types of services available to most of them are much more rudimentary than in the large towns. They centre mainly on refuse collection, maintenance and construction of simple roads and tracks and the issue of building permits.

This chapter has reviewed the development of the national planning process where the need to minimize regional disparities and the urban-rural gap is now seen as a key feature for future development. The chapter also reviewed the provision of three basic services- education,

Table: 3.18

Regional distribution of villages served by municipal services, 1984.

Region	Total No. of villages	(a) No. of villages served by Local municipality	(b) No. of villages served by village clusters	Total served villages (a + b)	Percent of total villages
Central	1,225	271	467	738	60.2
Western	2,800	165	211	376	13.4
Eastern	200	91	57	148	74.0
Southern	5,470	509	755	1,264	23.1
Northern	733	98	173	262	35.7
TOTAL	10,428	1,125	1,663	2,788	26.7

Source: Compiled from Al-Muslim, 1984, p. 208.

health and municipal services- where it is apparent that the regional distribution of these services is uneven. It has shown that the Central, Western and Eastern regions, which have large urban centres, have more access to these services, while the Southern and Northern regions, which are primarily rural regions, are far less well served. The later part of this thesis will be examining the problems of the level of provision of basic services in a major part of the predominantly rural Southern region which has here been identified as a deprived area. The next chapters consider service provision in Asir province, a major part of the Southern region.

PART TWO

CHAPTER FOUR

GENERAL CHARACTERISTICS OF ASIR REGION

4.1 THE PHYSICAL CHARACTERISTICS

4.1.1 GEOGRAPHICAL FEATURES

As background for an examination of service provision in Asir region, this and the next chapter present the basic characteristics of the province. Asir province can be divided into three main topographical zones. From west to east, these are the Tihama which is part of the Red Sea coastal plain, the mountain ranges and the upland plateau (Fig. 4.1).

The Coastal Lowland (Tihama)

The Tihama in Asir as well as in the Hijas and Yemen is thought of as lowland, but it does includes some higher land. Asir nowhere reaches the Re d Sea coast but its Tihama area has a maximum width of 40 km which bring it within 20 km of the coast. East of the true coastal plain section is an area known as the hilly Tihama which is composed of many parallel ridges with heights starting at 100 to 200 metres in the west and rising eastward to elevations around 1,600 metres near the escarpment edge of the mountain zone. The Tihama is composed of tertiary rocks with its lowlands covered with alluvium, sands and gravels. The drainage flows westwards across the hilly Tihama in wadi gorges, like Wadi Baysh, Rahah, Mohrah and Wadi Haswah which empty out on to the coastal lowland.

The Mountain ranges (Sarat)

The mountains of Asir are generally known as the Al Hijas mountains but they take several local names. In the

south they are known as Sarat which means the high mountains. These mountains extend from Taif in the north to beyond Dhahran Aljanub in the south of Asir and on into Yemen. The western slopes of the mountains are marked by a major escarpment which falls away precipitously from about 3,000 metres above sea level around Alsawdah near Abha towards the hilly Tihama. The eastern slopes are more gentle and are divided by a series of green fertile wadis and basins which allows for much farm settlement between the mountains and hills. In fact these mountains are the highest part of the Kingdom, being composed of massive crystalline rocks with a partial cover of sandstone and basalt particularly in the south of the region around Sarat Abidah. The mountain zone varies in width but is about 45 km wide in the Sarat Abidah area.

The Upland Plateau

This zone extends eastwards from the mountain ranges and is a flatter area composed of detritus washed from the mountains. In places the surface is interrupted by extinct volcanic cones and extensive lava flows and outcrops of granitic and crystalline rocks similar to the main mountains. The altitudes of the plateau are between 600-1500 metres gently dipping down to the Empty Quarter. As the main mountains of Asir act as a water divide the drainage system of the plateau flows from the mountain ranges towards the east. These wadis create many valleys, but most of them collect into the great systems of the Wadi Bishah and Wadi Tathlith.

4.1.2 CLIMATE AND WATER RESOURCES

The climate of Asir, especially of the mountains, is relatively cool, humid and pleasant which makes it unique

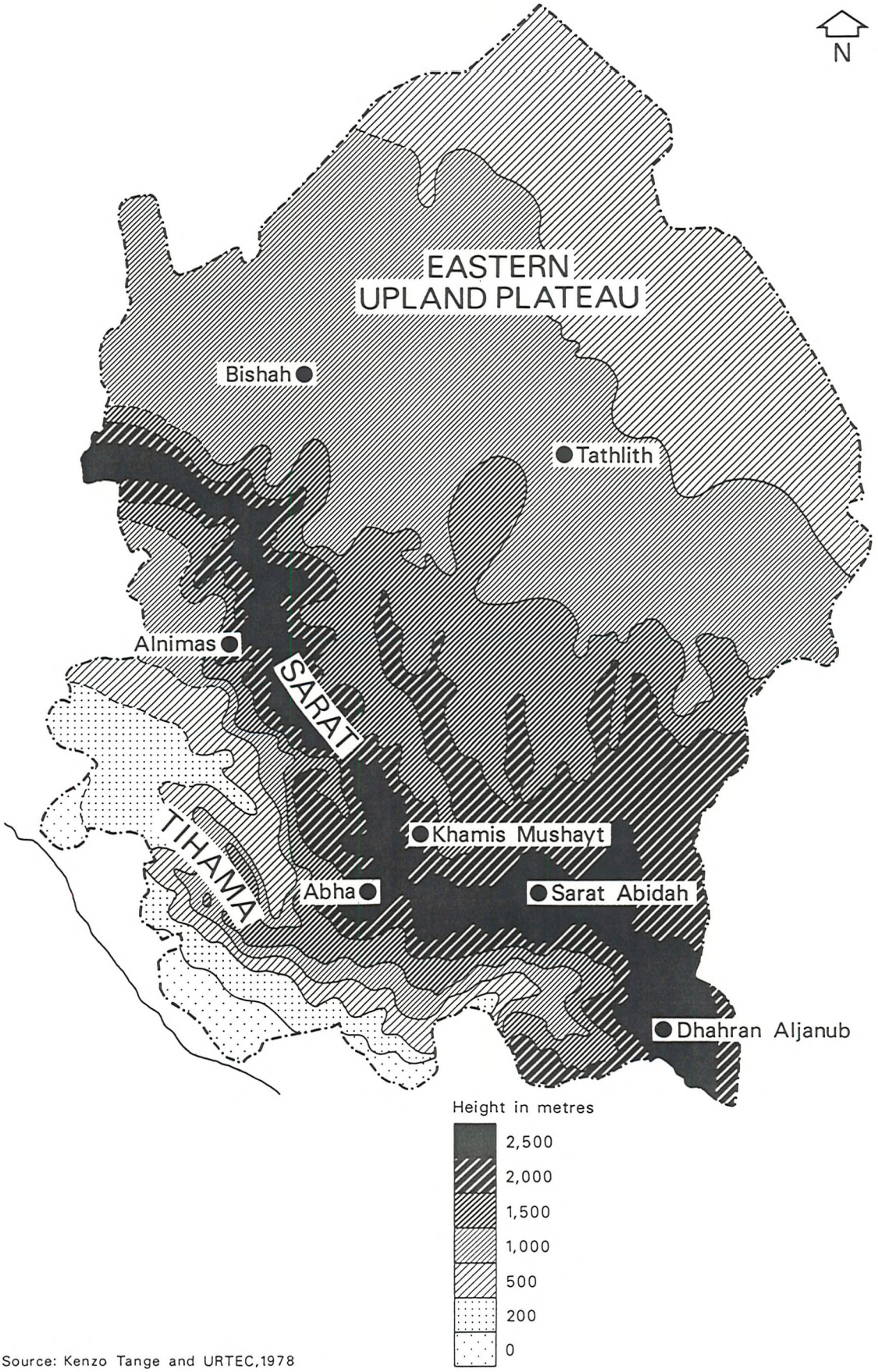


Figure 4.1 Topographical features of Asir

for Saudi Arabia. The detailed study of Asir's climate is difficult because of the lack of climatic data. What data is available is mainly for a short run of years and concerned with the precipitation and temperature because of their influence on various aspects of human activities.

Air Temperature

Data on air temperatures is very limited and restricted to a few places around the province. Table 4.1 shows the monthly mean air temperatures for three stations. Abha and Alnimas (160 km north of Abha) are in the mountain zone and Bishah (260 km northeast of Abha) in the eastern plateau zone. Abha and Alnimas have almost the same elevation and therefore enjoy cooler temperatures, and lower summer extremes than places like Bishah at a lower elevation. The coldest winter months at Alnimas and Abha are December and January with averages of 10.5 °C for Alnimas and 13.5 °C for Abha. The hottest four months for both Abha and Alnimas are from June to September at 21-23 °C . Each station has an annual range of little more than 10 °C.

In contrast further to the east the air temperature increases rapidly with an annual range of 25 °C for Bishah. Other data would show higher temperatures and greater temperature ranges also extend across the Tihama and those parts of the eastern plateau with altitudes less than 1,000 metres. These areas generally have annual mean temperatures of more than 25 °C. In contrast in the mountain area with elevations commonly over 2,000 metres, the annual mean temperatures are less than 18 °C, because of lower summer temperatures and slightly lower winter temperatures. Here the seasonal temperature range is much less.

These variations in temperatures have influence on the distribution of crops grown and allow especially for various

Table: 4.1

Monthly mean temperatures at selected stations in Asir, (°C).

Months	Abha (1976-81) Elev.2,200 m	Alnimas (1976-84) Elev. 2,600 m	Bishah (1976-84) Elev.1,020 m
January	13	10	18
February	14	11	19
March	16	14	23
April	18	16	26
May	20	18	29
June	23	21	30
July	22	21	31
August	22	21	31
September	21	21	28
October	18	17	24
November	15	12	20
December	14	11	18
Average	18	16	25

Source: Ministry of Agriculture, Dept. Of Hydrology.

sorts of grain production. In the mountains where temperatures are lower the staple crops are wheat, barley, coffee and some fruit. In the Tihama sorghum, millet and sesame are common. The date-palm is grown in the upland plateau in Bishah and Tathlith, Bishah alone has more than 95 percent of all the date palms found in Asir.

Rainfall Patterns

Asir region lies in a transitional zone invaded by different air masses at different times of the year. From the rainfall map we can divide the region into three zones according to their elevation and isohyets. The hilly Tihama forms a wetter part and receives an annual rainfall of between 300 to 400 mm. This is due to its exposure to the humid winds from the Red Sea and the gradual increase in the elevations towards the escarpment. But many of the low-lying parts of the Tihama lie in mountain shadows and are much drier and are of little use except for grazing nomadic animals.

Much of the mountain zone receives even more rainfall. There are two main areas of greater rainfall, related to altitude, with average annual rainfall amounts of 500 mm around Abha and further north at Alnimas. These two areas have the highest rainfall in the region as well as in Saudi Arabia. The eastern slopes of the mountains and the eastern plateau form a third much drier zone. Here in the rain shadow of the main mountain parts the rainfall amounts decline rapidly to the east and fall to less than 120 mm around Bishah and about 60 mm around Tathlith.

Table 4.2 gives a summary of the seasonal distribution of rainfall for some stations in the region. It shows that spring (March-May) is the main rainy season at all stations (except in the Tihama) and accounts for half of all Asir's

rainfall. The spring rains are proportionately higher in the southern mountains than in the north. Spring rains bring 56 percent of the yearly precipitation at Dhahran Aljanub and 55 percent of the rain in Alharajah. This is probably the result of the early monsoon wind from the southwest. In contrast the north of Asir comes more under the influence of the north-westerly winds in winter which bring more abundant rainfall to the north than to the south. Sabt Alalayah and Alnimas in the north of the region, for example, receive 34 percent and 36 percent respectively of their annual rains in December, January and February. This percentage decreases to 20 percent at Abha and to 18 percent at Dhahran Aljanub in the south.

The eastern plateau also gets most of its rainfall in the spring. The months of March, April and May bring 72 percent of the yearly rain at Tathlith and 64 percent of the rain in Bishah but the total amounts are small. The rainfall pattern in the Tihama is different from the mountain and eastern plateau. It receives most of its rainfall in summer and autumn storms. Muhayil, for example gets 62 percent of its rainfall in these seasons and gets only 12 percent in winter and 26 percent in spring.

Water Resources

As has been indicated the main elevated parts of Asir region have the highest rainfall amounts in the Kingdom, with an annual mean exceeding 450 mm in some parts of the region. For this reason Asir offers considerable potental for water resources development. The total runoff of the region is estimated to be more than a billion cubic metre per year (Kenzo Tange, 1978). Some of this water is available in the form of shallow groundwater and wadi runoff, and much use has been made of this to supplement the

Table: 4.2

Seasonal average distribution of rainfall at selected stations in Asir, 1975-1984, (mm).

Zone	Station	Elevat. (m)	Winter	%	Spring	%	Summer	%	Autumn	%	Annual Average
Tihama	Muhayil	450	54	12	114	26	141	33	126	29	434
	Almajardah	450	40	20	51	25	71	35	42	21	204
Mountain	Sabt Alalayah	1,850	100	34	140	47	32	11	23	8	295
	Alnimas	2,600	173	36	199	42	50	11	53	11	475
	Abha	2,200	76	20	172	46	92	25	35	9	375
	Alharajah	2,350	45	21	118	56	33	16	14	7	210
	Dhahran A.	2,020	39	18	116	55	43	20	14	7	212
Plateau	Bishah	1,020	17	15	72	64	13	12	10	9	112
	Tathlith	975	8	12	46	72	3	5	7	11	64

Source: Ministry of Agriculture, Dept. of Hydrology.

rainfall for agricultural purposes.

As elsewhere in Saudi Arabia available water resources strongly influence the pattern of settlement. Two major sources and one supplementary source of water can be identified here.

1) The relatively abundant and more reliable rainfall received in the mountains and foothill zone of the Tihama has made possible the use of that rainfall where it falls by terracing many lower parts of the mountain and hill slopes for crop production. Much of this terracing is centuries old.

2) Runoff water particularly collects in the larger wadis that flow eastwards out of the mountains down the dipslope. Wadis Bishah, Tathlith and Itwad, for example, feed numerous wells by their subwadi flows. Many oasis settlements are based on those in the semi-arid plateau area. There are more than 1,500 wells in Wadi Bishah and more than 250 in Wadi Tathlith (El Khatib, 1980). Another traditional technique used to capture runoff is by damming wadis at appropriate points. Many small dams have been operated very successfully for many generations to supply water for the local populations and for their agricultural activities. The shorter wadis that drain the western slops of the mountains pour down the escarpment into the Tihama. This water is more difficult to harness but patches of irrigation are found in their gentler upper sections east of the escarpment and in their flatter lower courses west of the escarpment.

3) The Ministry of Agriculture and Water has recently developed a third water resource by desalinating seawater to help meet the increased demands of industrial and urban areas in the nation. In the case of Asir there is a huge project now under construction to bring water from the Red

Sea near Alshuqayq (122 km from Abha) up the escarpment to the Abha-Khamis Mushayt metropolitan area but this will only be for non farm uses.

4.2 THE POPULATION

4.2.1 THE PRESENT POPULATION

The scantiness of available population statistics in Saudi Arabia has been noted in many published studies, so that it is difficult to make a proper analysis of Asir's population. Only two censuses have been taken in the Kingdom. The first census taken in 1962-63 gave the country a total population of 3.3 millions, compared with a government previous estimate of nearly eight millions. As a result of its suspect reliability this census was rejected by the government and remained unpublished except for some parts of it which have become available since 1963 for official use only.

The second and most recent census was taken in 1974 and appeared in 1976. There has also been some doubt thrown on the accuracy of the 1974 census because of the lack of administrative machinery to run it, the inexperience of the population in providing information and some hostility to providing that information. Nevertheless the 1974 census gave the population of Asir province as about 678,000. This equalled 10.2 percent of the Kingdom's population.

A year before the second census was taken an estimation of Asir's population was made by the consultancy company Ilaco which prepared a socio-economic plan for the Southwest region of the Kingdom for the Ministry of Planning . It estimated Asir's population at 624,000, which provides some confirmation for the census figure. Another estimate made by

the Japanese consultants Kenzo Tange is in line with the 1974 census figure, given that the Kenzo Tange data was collected four years later. It is also clear that Asir's population is rapidly expanding, so that it is not surprising that a 1983 study of the Asir Emirate numbered the province's total population at nearly 1,100,000, or 62.2 percent more than the 1974 census figure.

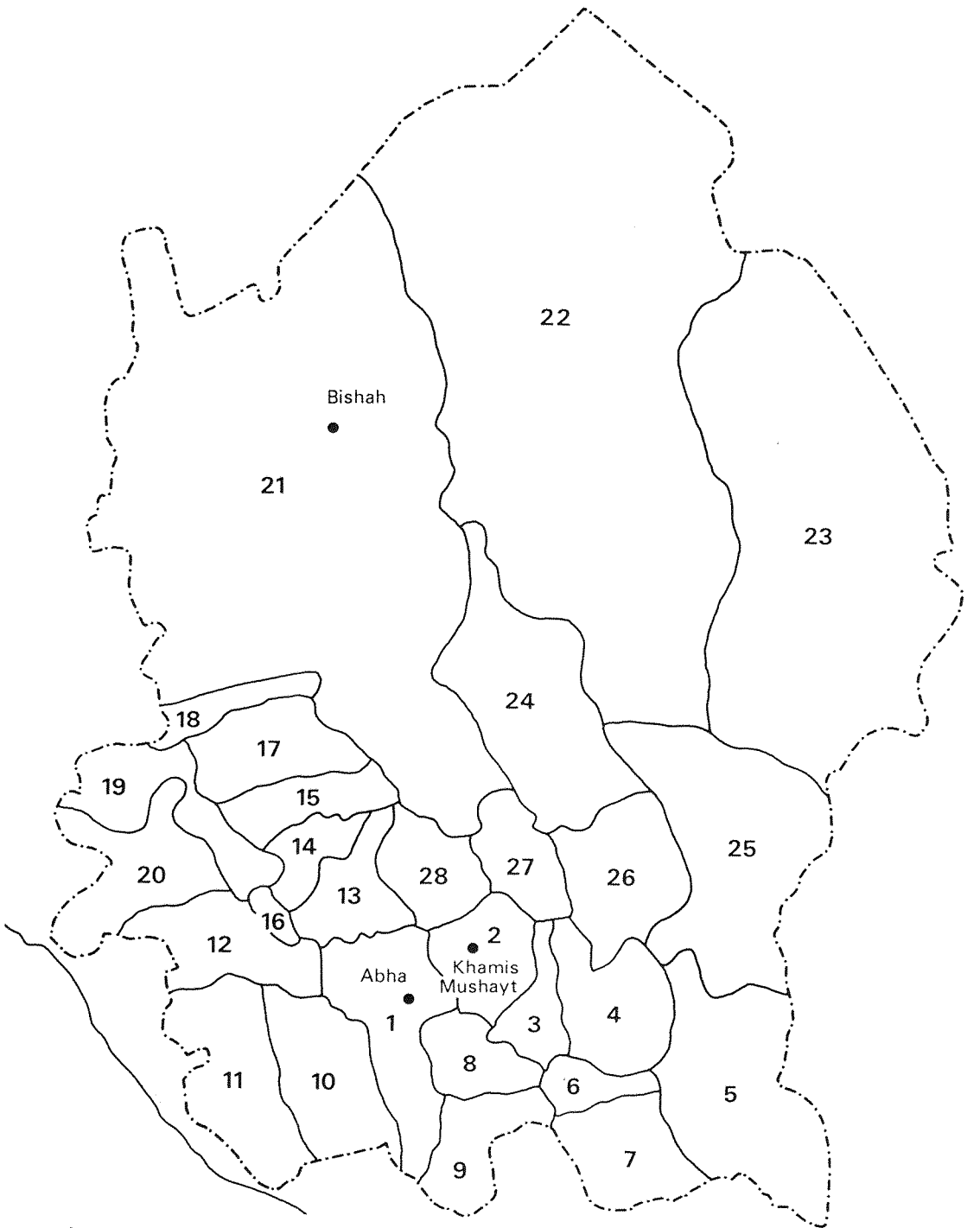
Table 4.3 shows the various estimations that have been taken by different studies in the Asir region, alongside the census figures. The Emirate study, as the most recent, may also be the most accurate because it counted the population in every village in the region which earlier surveys failed to do.

Table: 4.3
Various estimations of Asir's population

The 1962-63 Census	365,063
ILACO estimation, 1973	624,000
The 1974 Census	678,679
Kenzo Tange, 1978	
Low estimatiom	797,900
High estimation	924,700
Asir Emirate, 1983	1,085,203

One of the problems of further assessing these various population estimates is that they were often taken on the basis of different administrative subunits within the region whose boundaries changed between the main 1974 census and the 1983 estimation. The 1974 census divided Asir province into 28 subemirates which varied greatly in size and had existed since well before 1974. These are shown in Fig. 4.2. Fig. 4.4 is also based on them. In 1983 they were replaced by 57 subemirates to reflect the expansion of administrative services in the region and the growth of the population over the last few years.

The 1974 census classified the population in Asir into



Source: 1974 Census

Figure 4.2 Administrative Units (subemirates) in Asir Region, 1974

three categories, the urban population of the six towns, the rural people in the 2,510 villages, and nomads based on 1,057 waterpoints. Table 4.4 shows Asir's population by these sectors. It can be seen that in 1974 the urban population had the smallest share of the population, with only 15 percent of the total. The rural population made up 57.8 percent and nomadic population 27.2 percent. Too much reliance cannot be placed on the rural/nomad division because these two groups are hard to distinguish. A consultancy company report in 1975 estimated the rural and nomadic population at 75 percent and 13 percent respectively and the nomadic population has continued to fall as more of them migrate to towns or settle permanently.

Table: 4.4
Asir's population by sector, 1974

Sector	Population	Percent
Urban	101,970	15.2
Rural	392,274	57.8
Nomad	184,435	27.2
Total	678,679	100.0

Source: The 1974 Census.

Fig. 4.3 shows the populations of Asir's towns according to their sizes. Only three towns had a population of over 10,000 in 1974, but all are growing rapidly. Khamis Mushayt was the largest town in the region with 48,197, or 47 percent of the urban population and Abha the capital, was the second largest with 30,354 (30 percent). Bishah was the third largest town in the region with 14,000 inhabitants (14 percent). The other three towns were all less than 3,500 persons each. A more recent estimation in 1985 gave Abha's population at 59,000, or 94 percent more than the 1974

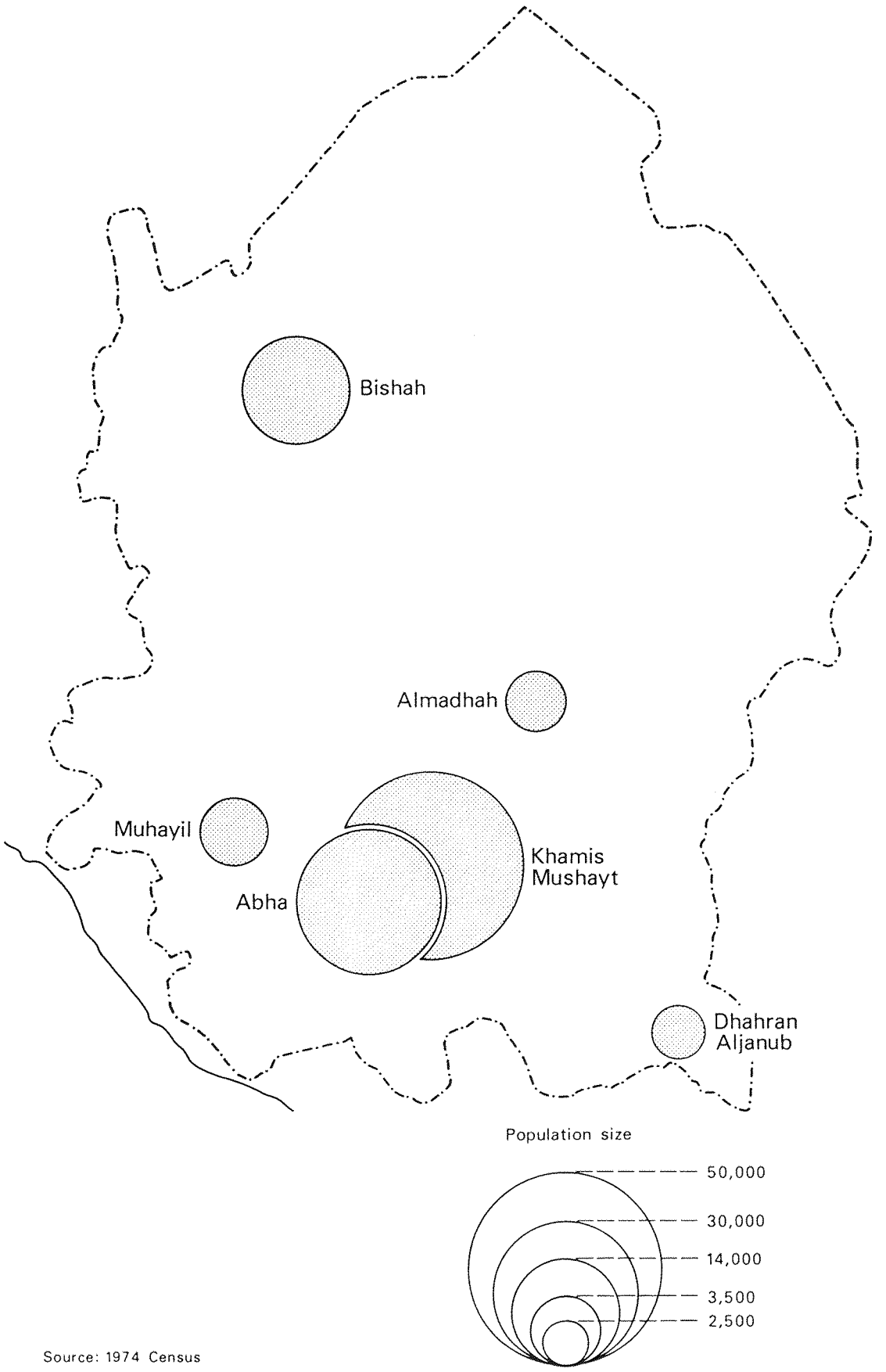


Figure 4.3 Towns in Asir Region by population size, 1974

census figure, and the city of Khamis Mushayt at 86,000, or 78 percent more than 1974 (Asir General Directorate of Municipal and Rural Affairs, 1987). Despite the limitations of the data, the evidence that Asir's towns, and especially the two largest towns, have rapidly expanded in recent years is clearly seen in their changed morphology with extensive areas of new development.

The foreign population in Asir was enumerated separately in the 1974 census at 31,611 or about 5 percent of the total population. About 69 percent of this population was Yemenis. Other Arabs made up 26 percent of the foreign population. Only 5 percent of this group were non Arabs, most of them Pakistanis.

4.2.2 POPULATION DENSITY

With nearly 679,000 population in Asir in 1974, Asir was one of the more densely settled parts of Saudi Arabia.As its population has continued to grow rapidly it remains an area of more dense settlement. In 1974 its 8.5 persons per square km, compared with 3.2 persons per square km in the whole country. Unfortunately none of the more recent population estimates of Asir were based on the 28 subemirates used in the 1974 census, so that it is not possible to compare changing pattern of population density.

Fig. 4.4 shows the region's population density in 1974. It shows that the mountains of Asir and parts of the Tihama had the highest density of inhabitants in the region. For instance, the subemirates of Abha, Khamis Mushayt and Almajardah had an average density of more than 37 persons per square km. On the other hand the eastern dry plateau areas had much lower densities with only 1.3 persons per square km in the subemirate of Tathlith. The great

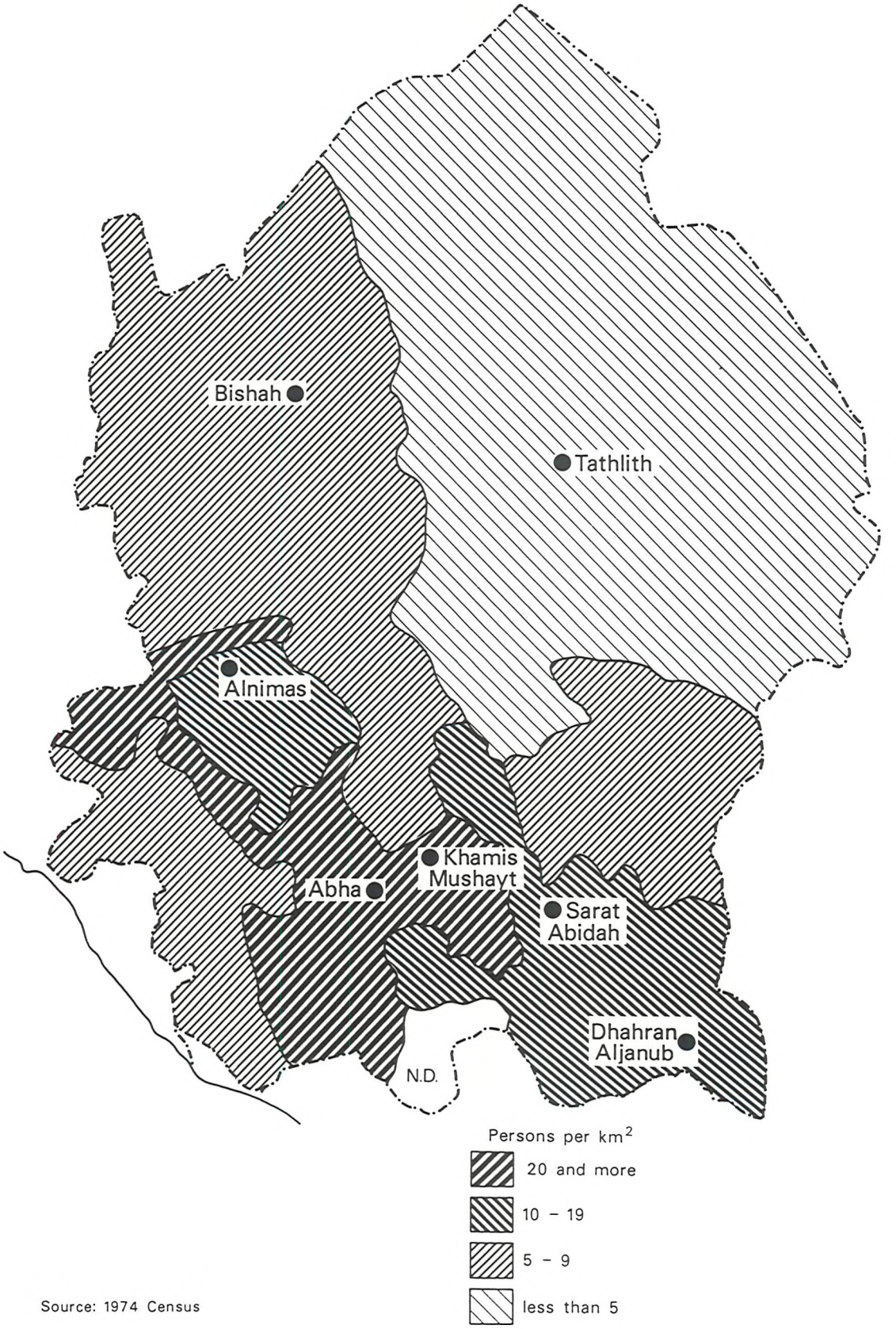


Figure 4.4 Density of Population by Administrative Area, 1974

concentration of inhabitants along the mountain zone and in the eastern parts of the Tihama relates to the greater rainfall and the suitablity of the land there for cultivation.

4.2.3 AGE AND SEX COMPOSITION

The census shows that in 1974 Asir's population was dominated by a large youthful age structure related to the high birth rate and declining death rate, and large family size. Table 4.5 shows the population of Asir by age and sex structure in 1974. It can be seen that 56.3 percent of the region's population was then under 20 years of age, to give a very young population pyramid, with a vast potential for future population expansion. In contrast the main active age group of persons between 20-49 years old formed 31 percent of the total population, little more than half of the younger age group. Only 13 percent of the population was aged over 50 years old.

The age structure varied, however, between different sectors of the population. Table 4.6 shows age and sex structure divided by sectors in Asir region. The 20-49 year age group of males was less well represented amongst the rural and nomadic population than in the urban sector. In the urban sector the proportion of males of this age group was about 41 percent of the total urban male population, whereas it was under 29 percent in the rural and nomadic sectors. This difference is probably mainly explained by the migration of rural and nomadic men into the towns. Most of the foreign population was also concentrated in the urban areas with the majority of them being males in this age group. The large number of urban males in this age group has the effect of depressing the percentages of urban males in

Table: 4.5

Asir's population by age and sex structure, 1974, (percent)

Age Group	Male	Female	Total
0 - 4	18.10	17.92	18.01
5 - 9	17.83	17.12	17.47
10 - 14	12.16	11.45	11.80
15 - 19	8.75	9.25	9.00
20 - 24	5.63	6.42	6.03
25 - 29	5.48	6.53	6.01
30 -34	5.31	5.79	5.55
35 - 39	5.71	5.27	5.50
40 - 44	4.80	4.54	4.67
45 - 49	3.53	2.97	3.24
50 - 54	3.52	3.51	3.51
55 - 59	1.97	1.54	1.75
60 - 64	2.98	2.88	2.93
65 & over	4.25	4.81	4.53
Total	100.00	100.00	100.00

Source: The 1974 Census.

the other age groups compared with the age pattern for the female population which not unbalanced in this way. Also the over 50 age groups are less well represented among the urban sector than in the rural and nomadic sectors, probably because older people return to their villages to retire.

Table: 4.6
Age and sex structiure by sectors, 1974,
(Percent)

Age Group	Urban		Rural		Nomad	
	M	F	M	F	M	F
0-19	50.8	59.2	58.7	54.5	57.7	56.4
20-49	41.5	32.4	27.2	31.5	28.9	31.1
50 >	7.7	8.4	14.1	14.0	13.4	12.5

Source: the 1974 Census.

Table 4.5 and Fig. 4.5 show only slight variations in the number of males and females across the age groups. Between the ages of 15 and 34 there were rather more females than males in the population as a result of young male outmigration from the region to the major urban centres of Riyadh, Jeddah and Dammam. Rather more females also survive into the over 65 age group.

4.2.4 BIRTH AND DEATH RATES

In spite of the relative lack of detail in the mortality and fertility statistics, it is clear that birth rates were high in Asir region at the time of the 1974 census as well as in the whole of the country. Birth rates remain high. They were estimated to be 45 per thousand births in 1982 (Scan Plan, 1982), and there is no evidence yet of fertility declining, with family size and the early marriage of women within the reproductive age groups remaining high. At the

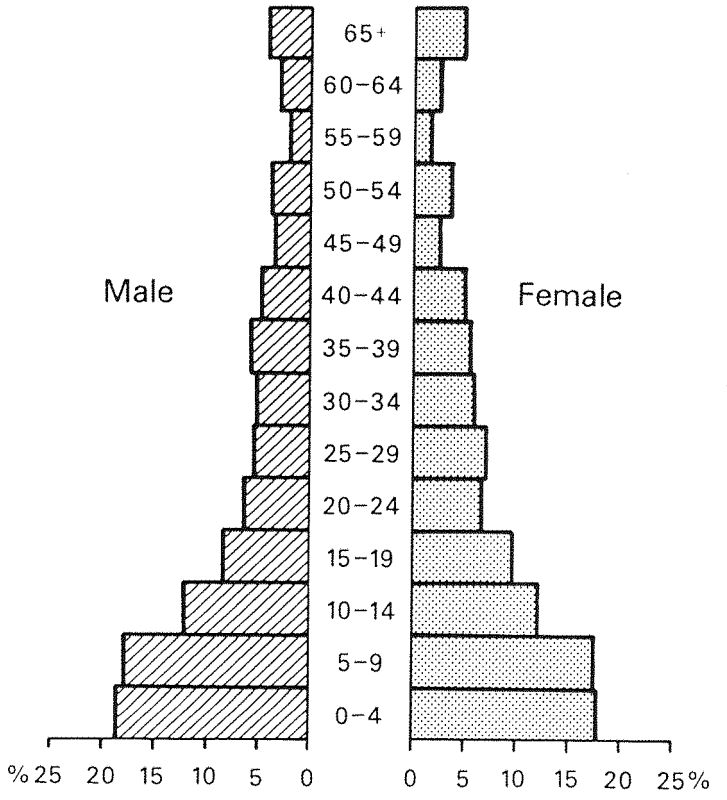


Figure 4.5 Age-sex pyramid of Asir population, 1974

same time the high mortality rates of the past have declined and continue to fall, as a result of the good access to health facilities and the rapid rise in the living standard of the population in recent years.

Because of a lack of data it is not possible to put figures to these trends, but an estimate made by Kenzo Tange for the Southern Region in 1976 showed that the gap between birth and death rates was much wider for the rural than for the nomadic populations, giving a rate of increase for the rural population nearly three times than for the nomads. In the region's main towns of Abha, Khamis Mushayt and Bishah the rate of natural increase was estimated at 35 per thousand in 1976. However, the Asir Emirate Study estimated a 4.1 percent per year population increase in the region in 1983.

4.2.5 EDUCATIONAL ATTAINMENT

According to the limited data on the educational status of Asir's population in the 1974 census, illiteracy was very common. 80 percent of the Asir's population aged ten years and above were deemed illiterate compared with an illiteracy rate of 64 percent for the whole Kingdom in 1974.

Table 4.7 gives the level of illiteracy of the population in 1974 divided by age and sex. It shows the greater levels of illiteracy among the females and old age groups with 93 percent of the population aged 50 years and over considered illiterate. At the same time, illiteracy was lower among the younger age groups of the males, with only half of the 10-19 year age group illiterate.

In contrast more than 88 percent of the females in the same age group were illiterate as a result of the much more limited development of the girls' school system. For example

at the time of the 1974 census there were only 116 girls schools in Asir region compared with 331 schools for boys. Over the next six years there were enormous developments in schools with 694 schools for males in operation and 253 schools for females in Asir by 1980. With this development the level of illiteracy amongst the young age groups has dropped rapidly since the last census, but much faster for males than females.

Table: 4.7
Illiteracy of Asir's population ten years and over by age and sex groups, 1974 (percent).

Age Group	Male	Female	Total
10-19	49.51	88.31	69.01
20-29	60.26	94.78	79.05
30-39	64.50	95.14	80.24
40-49	75.00	99.00	86.52
50 >	86.85	98.97	93.00

Source: The 1974 Census.

The census also divided the educational attainment of Asir's population into its urban, rural and nomad sectors and also classified it as illiterate, able only to read and literate. Table 4.8 elaborates on Table 4.7 to show the literacy status of the population divided by sector, and sex in 1974. As would be expected, the lowest rate of illiteracy was found in the urban sector of the population, with 56 percent of the males and 22 percent of the females literate, a considerably higher figure than for the rural population. Literacy rates were very low among the nomads. 92 percent of the males amd 99.5 percent of the females in the nomadic sector were illiterate. It is clear that the urban population enjoys more literacy as a result of better access to education facilities than the rural and nomad population.

The small percentage of rural and urban persons able

Table: 4.8

Literacy status of Asir's population ten years and over by sector and sex in 1974, percent.

Literacy Status	Urban		Rural		Nomad		Total Region
	M	F	M	F	M	F	
Illiterate	38.5	75.9	61.1	96.7	92.1	99.5	79.9
Read Only	4.9	1.7	6.1	0.5	1.8	0.1	2.6
Literate	56.4	21.8	32.6	2.5	6.0	0.2	17.3
Unstated	0.2	0.6	0.2	0.3	0.1	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: The 1974 Census.

only to read largely results from the rudimentary education provided in the past by learning how to read the Holy Qur'an. Not surprisingly levels of formal educational attainment were very low among the population in 1974. Less than 4 percent had completed elementary schooling and less than 1 percent had enjoyed a secondary level education in 1974. These low percentages of schooling of the population are referred to again in chapter six.

4.3 SETTLEMENT PATTERNS

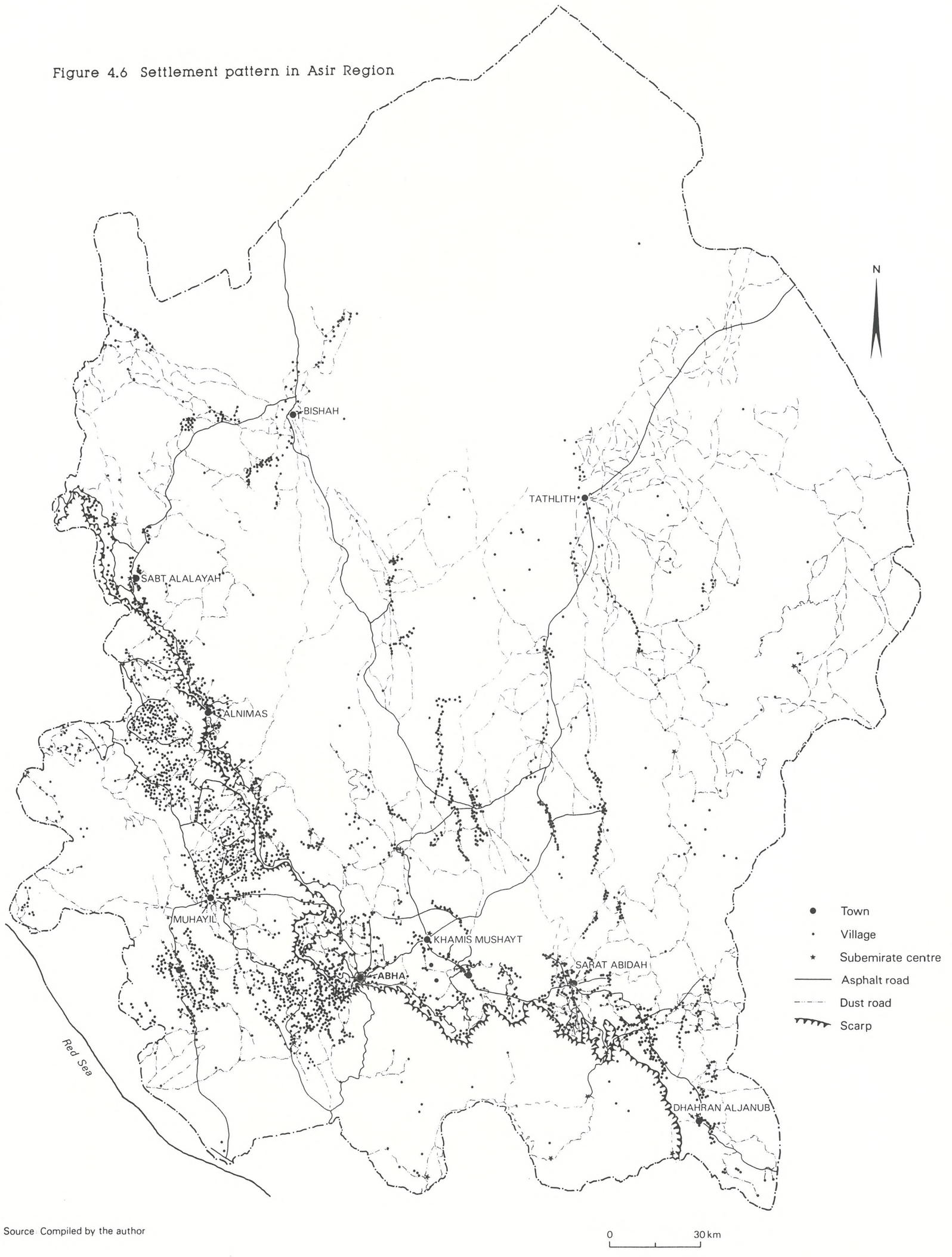
4.3.1 INTRODUCTION

As one would expect the types of settlement in an area of traditional rural occupance and little urban development, as in Asir, are influenced by the topography, the climate and the availability of water resources. Because Asir divides readily into three zones topographically, the Tihama, the wetter mountains and the dry upland plateau, it is convenient to distinguish three types of settlement patterns largely related to these topographic zones. The density of settlements in Asir varies markedly across these zones. This section outlines these basic settlement patterns.

Most settlement is found in the wetter mountain zone. Here small patches of wadi and rainfed terraced land can support quite a dense pattern of farm villages. To the east in the drier plateau the scatter of settlements, often based on oasis well cultivation, is thinner. In the Tihama, especially in the more hilly parts, are found very small clusters of villages spread out at the foot of the main escarpment.

The author has constructed Fig. 4.6 from data and 62

Figure 4.6 Settlement pattern in Asir Region



Source: Compiled by the author

maps in a 1983 Asir Emirate survey with the help of field observation. It shows Asir's settlement is dominated by a very large number of mainly small farm villages and hamlets, ranging in size from a few families in the smallest hamlets up to several hundred people in larger villages. These villages and hamlets are sited where they command useful soils for farming and the necessary water supplies. Historically also, good defensive positions by which the tribal and kinship groups could defend their lands from others, were important.

Since the villages account for the majority of settlements in Asir their pattern and characteristics will be considered before those of the traditional nomadic and newer urban areas. It is neither possible nor necessary to consider the village pattern in detail in every part of the province so that a few sample studies will be used to illustrate the variety to be found.

4.3.2 VILLAGE CHARACTERISTICS

Considerable uncertainty still exists on the number of villages to be found in Asir partly because of a lack of survey data and partly because of the problem of distinguishing a small hamlet from a single isolated family farm or cluster of family buildings. Over the last few years four estimates of the number of villages in Asir have been made. These are given in Table 4.9 which shows that the figures range from a low estimate of 1930 settlements by Kenzo Tange in 1976 to a high figure of 4007 villages given in the Asir Emirate Survey in 1983. It is probable that the emirate survey figure is the more correct and certainly closer to that given by the 1974 census. It is now the basic figure for Asir villages used by various government

agencies. On this basis the village populations would account for 785,400 people, or 72 percent of all of Asir's inhabitants, which again agrees with the figures given in the 1974 census.

Table: 4.9
Estimations of number of villages in Asir.

The 1974 census	3,567
Kenzo Tange, 1976	1,930
Sogreah Investigation, 1984	2,972
Asir Emirate Survey, 1983	4,007

The great majority of this large number of villages and hamlets have occupied their sites for very long periods of time although as the population has increased new "daughter" settlements have grown up when young members of families have set up their farms and homes where land was available at some distance from the main family group. The great age of many villages in Asir is not only clear from field observation but also from the writings of the early geographer, Al Hamadani. More then 1,000 years ago he mentioned the names of many tribes and their settlements in the mountain districts of Asir and these names and settlements are still to be found there.

Table 4.10 lists the number of villages in each of the 57 subemirates in Asir together with their total population and average village population size. It is immediately clear that the average size of village for the whole province is less than 200 inhabitants but that there is considerable variation around this mean across the 57 subemirates. For example Almajardah subemirate in the Tihama area has the largest number of villages (303) of any subemirate in the region giving a mean size per village of 117 inhabitants. This small size of village results from the fact that most of the settlement in this subemirate lines the slopes of the

Table: 4.10

Village distribution by subemirates in Asir, 1983.

No.	Subemirates	No. of villages	Total populat.	Average size of village
1	Abha	134	25,095	187.3
2	Khamis Mushyt	46	9,000	195.7
3	Hijla	99	4,285	43.3
4	Tindahah	included with Khamis Mushayt		
5	Ahad Rufaydah	88	15,000	170.5
6	Alshaf	66	19,786	299.8
7	Alfatihah	21	4,110	195.7
8	Alfarashah	25	14,320	572.8
9	Sarat Abidah	149	39,485	265.0
10	Aljawwah	19	6,250	328.9
11	Alharajah	128	15,975	124.8
12	Dhahran Aljanub	67	14,704	219.5
13	Alab	1	350	350.0
14	Alfayed	54	13,416	248.4
15	Alarquayn	52	5,222	100.4
16	Alamwah	26	27,840	1070.8
17	Alayn	1	1,600	1600.0
18	Tathlith	68	21,270	312.8
19	Alsubaikhah	17	6,685	393.2
20	Alhimdhah	included with Tathlith		
21	Almadhah	24	8,805	366.9
22	Alarin	63	9,685	153.7
23	Tarib	33	6,786	205.6
24	Yara	125	12,425	99.4
25	Khayber Aljanub	45	13,910	309.1
26	Wadi Bin Hashbal	65	14,416	221.8
27	Bellahmar	108	17,761	164.5
28	Bellasmar	121	12,220	117.5
29	Tanumah	113	13,856	122.6
30	Alnimas	76	29,935	393.9
31	Bani Amar	91	21,535	236.6
32	Samakh	45	10,960	243.5
33	Alsalmah	45	3,975	305.8
34	Wadi Tarj	16	4,565	285.3
35	Sabt Alalayah	117	31,483	269.1
36	Bashut	17	11,280	663.5
37	Albashair	33	10,171	308.2
38	Khatham	38	14,935	393.0
39	Alhazmi	60	15,864	263.4
40	Bishah	21	30,589	456.6
41	Alnaqiya	22	10,097	459.0
42	Althaniyah	48	18,105	377.2
43	Tabalah	included with Althaniyah		
44	Aljabah	" " "		
45	Abs	47	10,590	225.3
46	Almajardah	303	35,548	117.3
47	Jumat Rabiah	13	2,110	162.3
48	Bariq	110	20,435	185.8
49	Thaluth Almandhr	100	15,587	155.9
50	Muhayil	174	32,978	180.5
51	Khamis Mutayr	183	10,486	57.3
52	Alsawdah	93	7,687	82.7
53	Rijal Alma	200	26,465	132.3
54	Haswah	100	16,137	161.4
55	Alhabiyl	74	7,040	95.1
56	Quna	103	14,622	142.0
57	Bahr Abu Sakinah	152	15,964	105.0
	Total	4,007	785,400	196.0

Source: Compiled from Asir Emirate Survey, 1983.

Wadi Gyis basin. 46 villages are strung out along the main wadi in order to command the available water and soils. The average distance between these wadi villages is less than two and half km and they are, of necessity, small.

On the other hand, the survey shows that the subemirates of Alamwah and Alayn in the east of the region have small numbers of villages but they have an average size of more than 1000 inhabitants per village. This large size of village results from the fact that these areas are dominated by large numbers of nomadic communities which have built houses in these villages but still wander with their stock for some of the time each year. Bishah subemirate also contains large oasis communities so that average village size here rises to over 450.

Adding some detail to this pattern are the results of the Sogreah consultancy study of rural Asir, carried out in 1984 for the Deputy Ministry For Rural Affairs which prepared a socio-economic survey of villages in the Kingdom. This study only enumerated 2972 villages in Asir but it subdivided those into three size groups on the basis of the number of houses counted in each place.

Table: 4.11
Distribution of villages by size in Asir, 1984

Vilage Size	No. of Village	%
Less than 60 houses	2,796	94.0
60 to 200 houses	168	5.7
More than 200 houses	8	0.3
Total	2,972	100.0

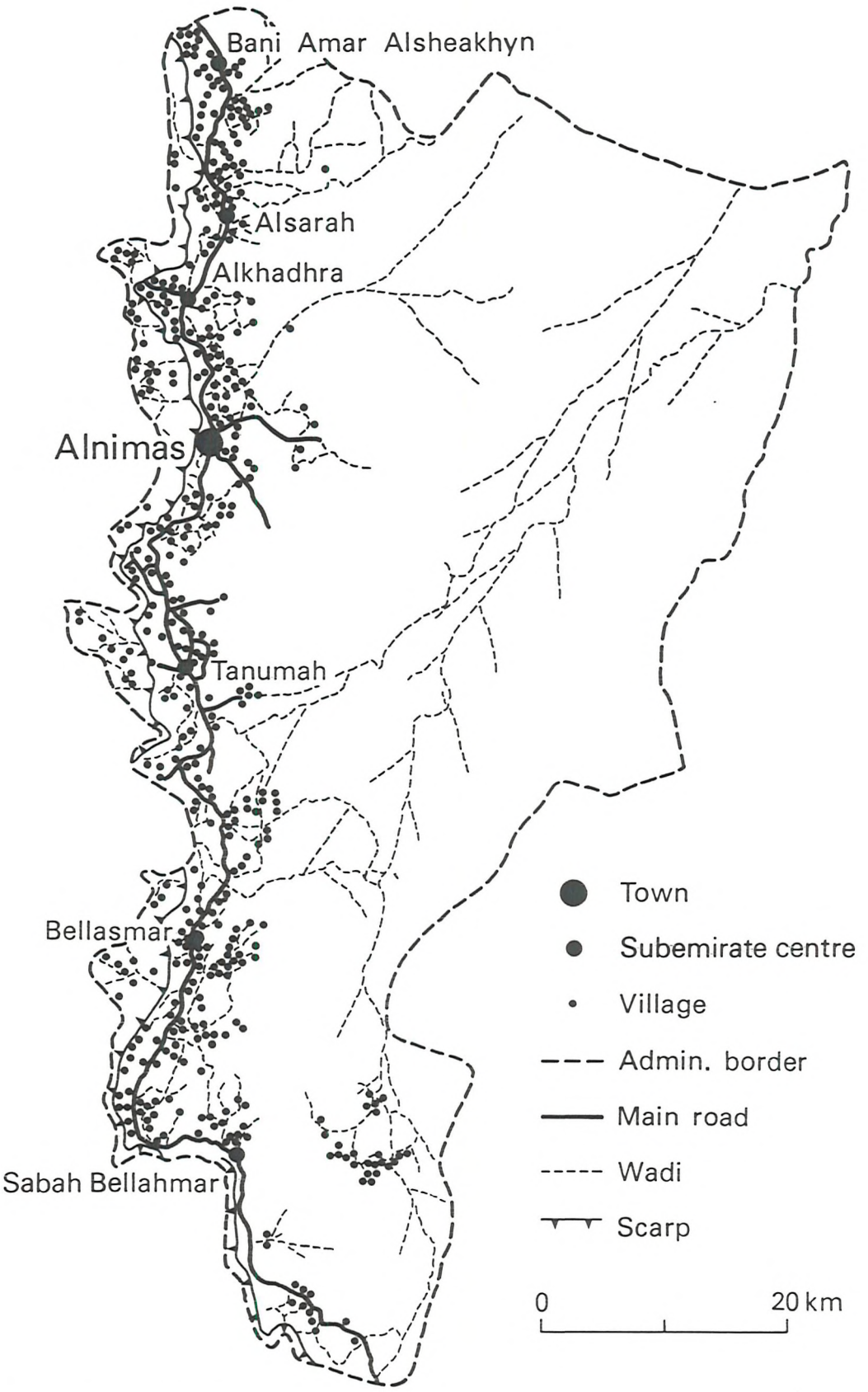
Source: Compiled from Sogreah Investigation, 1984.

Table 4.11 gives the results of this count. It shows that the great majority of the villages, 94 percent, had

less than 60 houses each. Most, presumably, would have had many fewer houses than this if average village size is less than 200 inhabitants but the data on this is not available. Only about 6 percent of the villages (168 villages) had between 60 to 200 houses and it is noticeable that several of these rather larger villages were common around Sarat Abidah, the main focus of this study, as well as around some other Asirian towns like Khamis Mushayt, Bishah and Tathlith. Only eight of the 2972 villages were counted with more than 200 houses. These are normally already small service centres with a market, secondary school and similar facilities like the towns which were not included in this survey.

4.3.3 THREE CASE STUDIES

Some of the variety in this pattern of small village settlement across Asir can be illustrated by looking briefly at three case study areas in different parts of Asir. Fig. 4.7 shows the settlement pattern of the occupied part of the five subemirates of Bellasmar, Bellahmar, Tanumah, Alnimas and Bani Amar. The village settlements in these subemirates can illustrate the settlement pattern in the main central mountain districts of Asir. The Sarat mountains run roughly north-south through Asir, reaching altitudes of over 2,500 metres in places. North and south of Alnimas they form a series of valleys and basins which offer good opportunities for rainfed farming and settlement. As Fig. 4.7 shows many villages congregate along the valley slopes in the main mountain area, while others are located just west of the main escarpment looking down over the Tihama foothills. The main highway north from Abha to Taif connects up many of these villages. Some villages cluster in the more open wadi



Source: Compiled by the Author

Figure 4.7 Settlement pattern in the Alnimas area

basins as at Tanumah (Photos 4.1 and 4.2). To the east the land is much drier and more empty except to the east of Sabah in Bellahmar where some oases are found.

The main feature of these mountain villages is the variety of their sizes. Table 4.12 classifies the 518 villages in this area into their main population size groups where it can be seen that 87 percent of the villages have populations of under 300, with villages of between 100-299 persons being most common. Few villages much exceed this size with only four, the subemirate centres of Bellasmar, Tanumah, Sabha and Alsheakhyn, having over 1,000 inhabitants. With so many small villages the provision of basic services presents major problems. The inhabitants of each small village are usually made up of one extended family and the settlement is often named after the family's grandfather. While each village would have its own mosque, it would normally have no school, health centre or other facilities. Nor would the next village which may be only a kilometre away have these facilities.

Table: 4.12
Classification of villages according to their population size in Alnimas area.

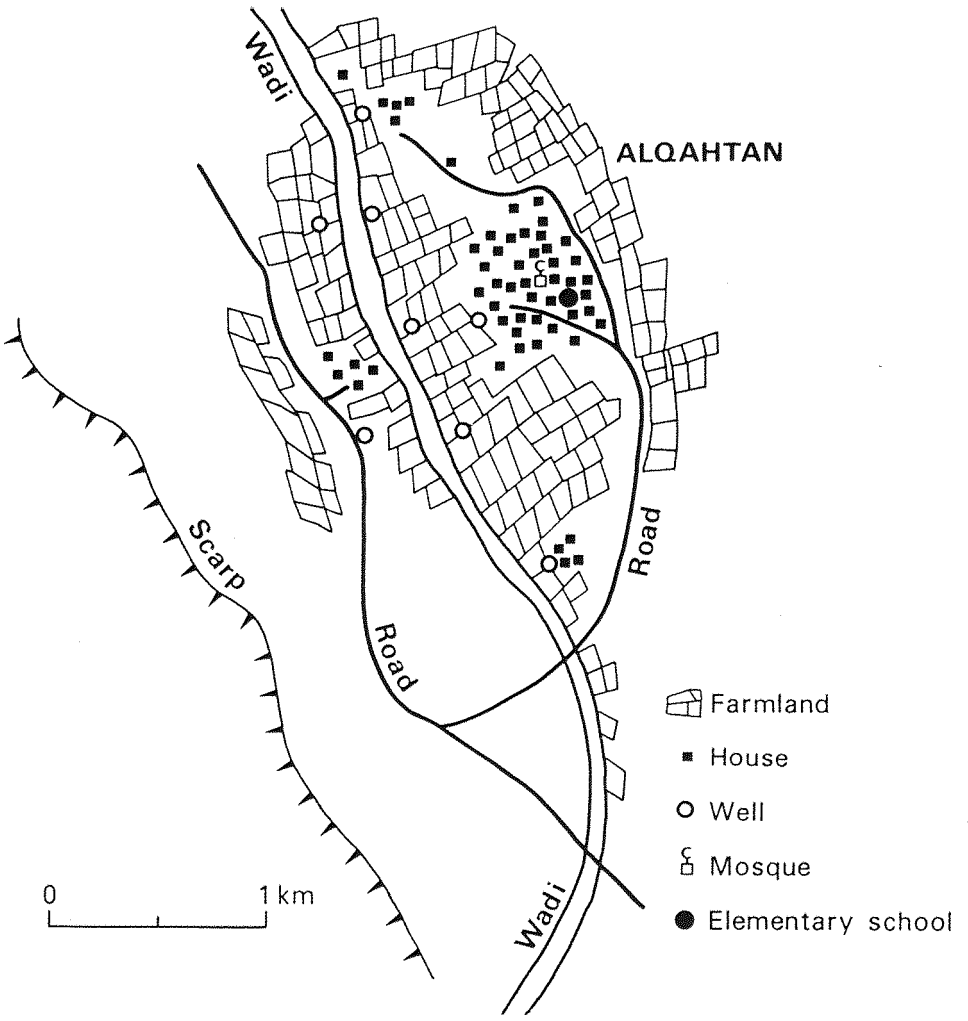
Village Size	No. of Villages	%
Less than 100	149	28.27
100 - 299	294	57.76
300 - 499	34	6.68
500 - 699	19	3.73
700 - 999	9	1.77
Over 1000	4	0.79
Total	509	100.00

Source: Based on Asir Emirate Survey, 1983.

Fig. 4.8 depicts the layout of one of these mountain villages, Al Qahtan, which is about twelve km north of

Photo 4.1 Cluster of villages in Wadi Tanumah in the Alnimas area

Photo 4.2 Small village (Aljamiyl) in the Alnimas area



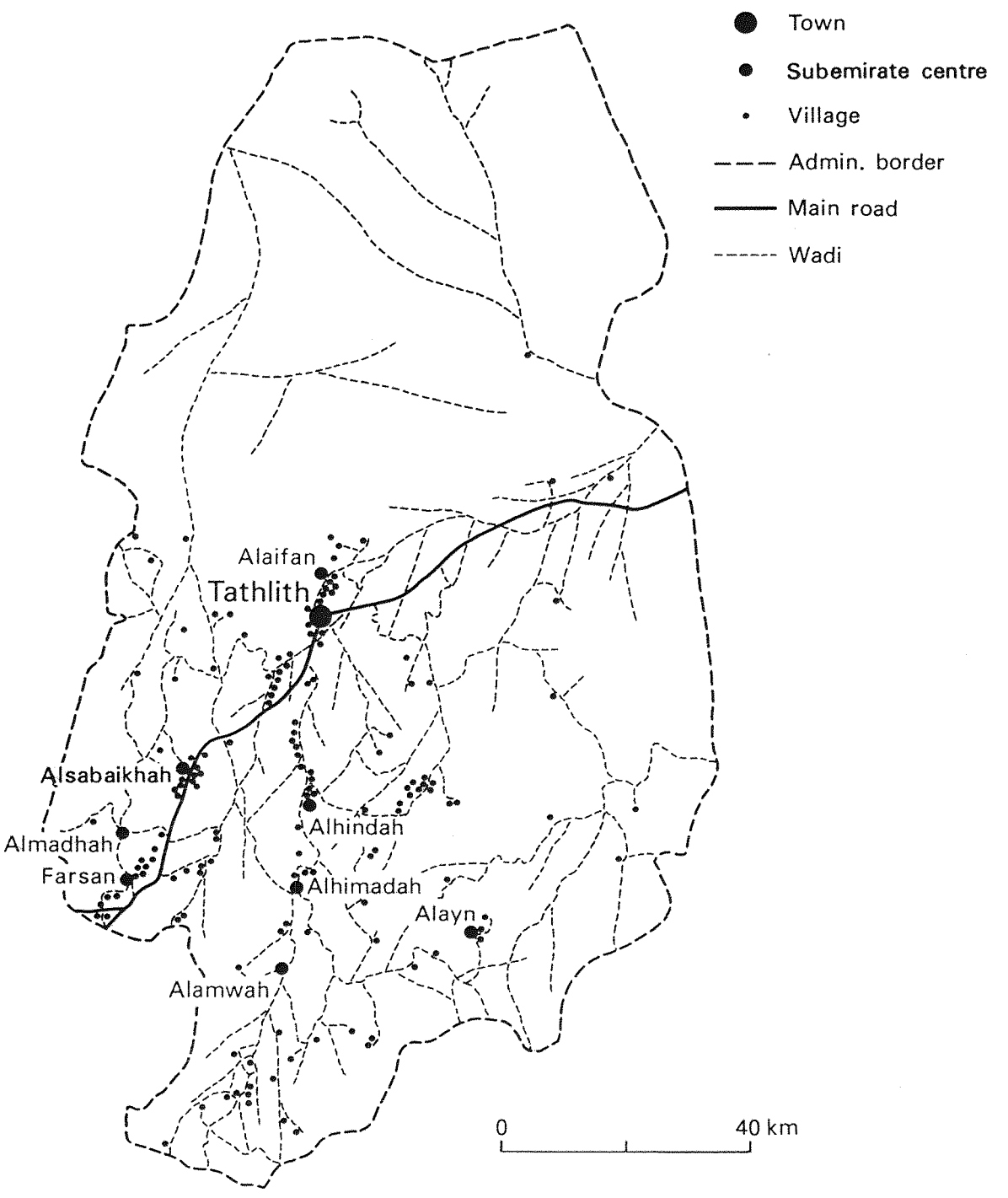
Source: Author's Fieldwork, 1987

Figure 4.8 Typical agricultural village in the mountains of Asir

Alnimas and close to the main escarpment. It is mainly sited on the east bank of the local wadi. Around the village are small plots of farmland on which the villagers raise wheat, corn, barley and vegetables with the support of well water. The houses which cluster around the mosque are large, two or three storey structures of rough stone. A total of 52 houses were counted in which live a population of about 500. Because this is a rather large village than is normal for this area a boys' elementary school has been opened in the village but this is the only service so far provided.

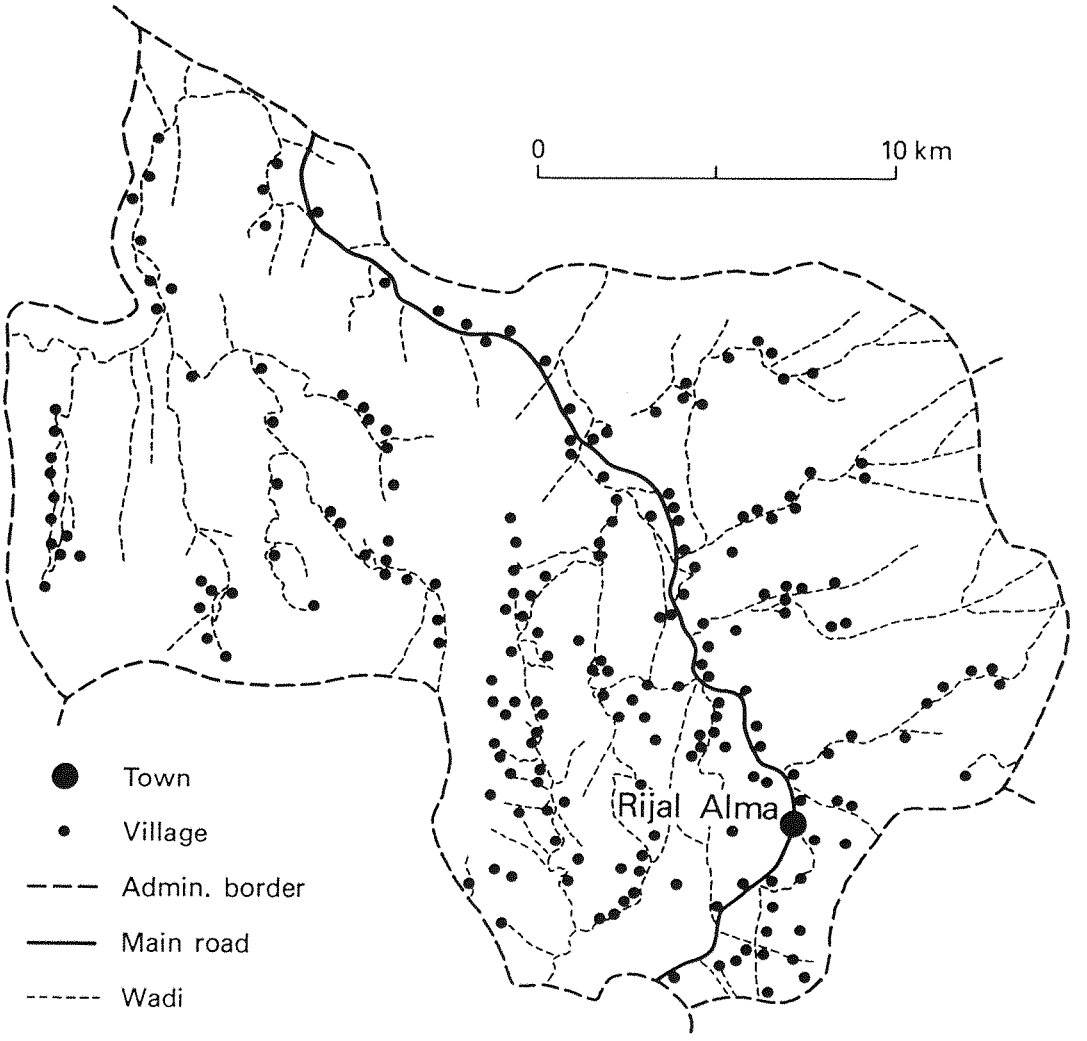
Fig. 4.9 illustrates the typical settlement pattern of the eastern plateau as seen in the Tathlith area. Here the pattern of permanent village settlements is much more scattered than in the mountains because the dry plateau can support far less settlement and much of the population is nomadic. In fact most of the villages shown are new as a result of government initiatives to help settle the nomads to a more sedenterized way of life. As a result several of these settlements, particularly the subemirate centres, as at Almadhah, Alamwah, Alayn and Alsabaikhah, are quite large, with over 1,500 inhabitants. These support some services and some of the other smaller villages are close enough to be served from them. Nevertheless service provision remains poor in these areas. Tathlith has about 2,500 population and acts as the main centre.

To illustrate the settlement pattern of part of the hilly Tihama Fig. 4.10 depicts the village pattern in the main part of the subemirate of Rijal Alma. There are about 200 villages in this area and the map shows that many are located beside the wadis particularly in the hills to the east beneath the main scarp where more water and better land is available and where runoff collects from the mountains to the east. Other settlements line the main roads. With a



Source: Compiled by the Author

Figure 4.9 Settlement pattern in the Tathlith area



Source: Compiled by the Author

Figure 4.10 Settlement pattern in the Rijal Alma area

population of 26,465 enumerated in this subemirate in 1983 average village size is 132 inhabitants. As in the mountains this creates major problems of basic service provision especially away from the only small centre of Rijal Alma with a population of about 2,000 where most of the public services are concentrated.

4.3.4 NOMADIC SETTLEMENT

While village populations dominate the settlement pattern of Asir it is also necessary to refer to the much smaller nomadic and limited, but rapidly increasing, urban population to complete this review. According to the 1974 national census Asir's nomadic population numbered 184,500, or about 27 percent of the total population of the province. Most of these nomads were to be found dispersed across the Tihama and in the dry eastern plateau but many also occur in the mountains. There are over 1,050 watering points in Asir. The nomads have traditionally moved around in small groups with their animals (sheep, goat and camel) to where they could find water and grazing resources. At their watering points they usually live in groups of ten to fifteen tents. Most of these watering points were found in the subemirates of Tathlith, Alayn, Bishah and Alamwah in the eastern plateau and in Alfarashah, Aljawwah and Muhayil in the Tihama area. The density of nomads in 1974 is shown in Fig. 4.11 based on the subemirate data.

Recent government policy aimed at settling the nomads at permanent locations in order to raise their low living standards has helped to reduce the number of persons still classed as nomadic. Droughts in the last few years have also encouraged this trend while government programmes to provide them with education, health and animal improvement

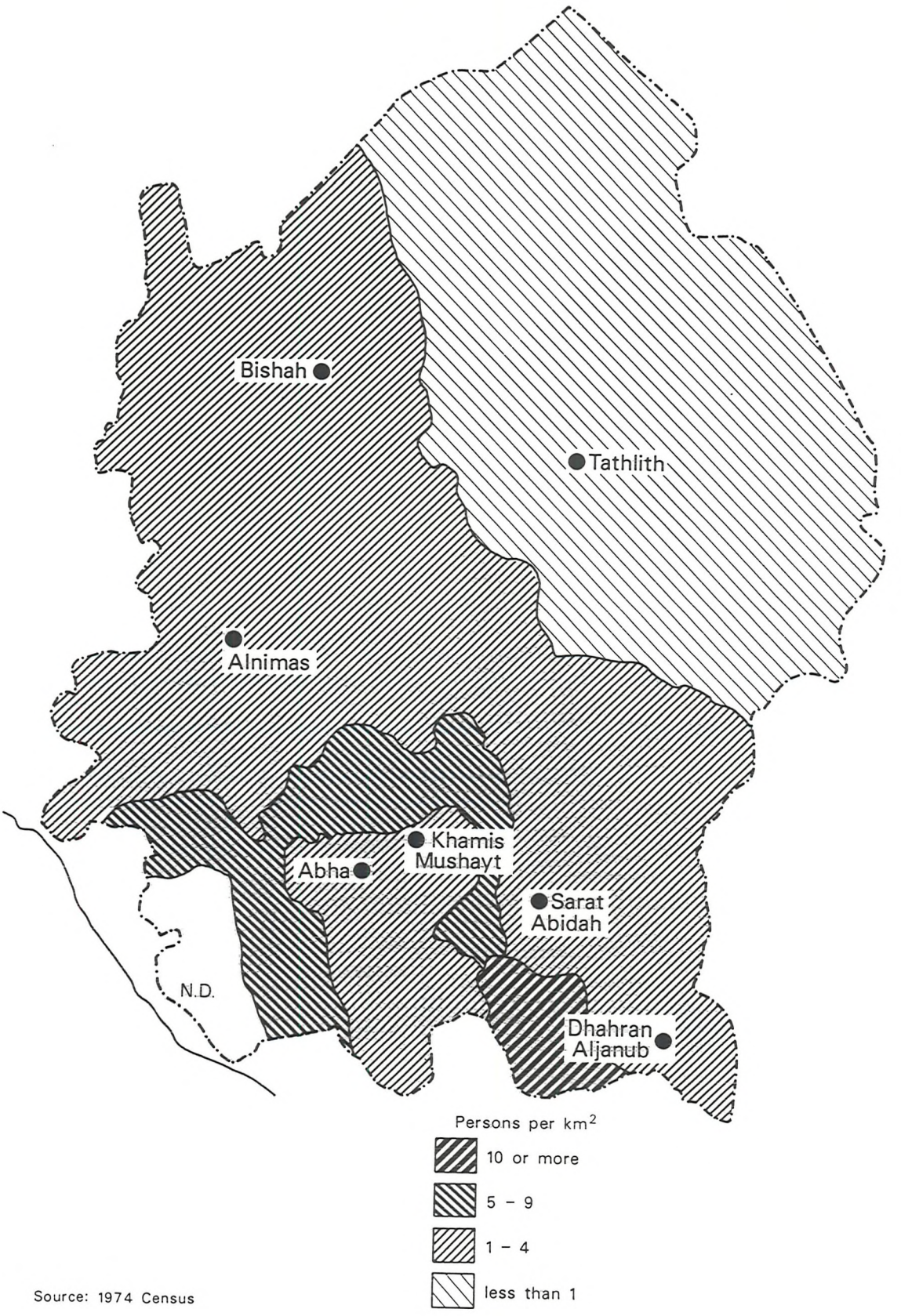


Figure 4.11 Density of nomadic population by subemirates, 1974

facilities will probably further reduce their number. The 1983 Emirate survey indicated that the nomads now numbered less than 10 percent of Asir's total population.

4.3.5 URBAN SETTLEMENT

The urbanization of the Kingdom of Saudi Arabia is occurring very rapidly as a result of the expanded oil revenue, which accelerated the modernization of the existing urban centres and increased the internal migration towards the towns. Riyadh, for example, with 179,000 people in 1962 had about 667,000 in 1974. Jeddah with 148,000 in the same year had more than 516,000 inhabitants by 1974 (Al-Ruwaithy, 1980) This massive expansion of cities in the Kingdom paralleled the rapid growth of the Saudi economy.

The growth of urban settlements in Asir region has been quite small compared with the large cities of Riyadh, Makkah and Jeddah. However, Asir's urban areas are growing rapidly. The three main towns of Abha, Khamis Mushayt and Bishah had a total population of about 93,000 in 1974, or about 14 percent of Asir population. This had risen to more than 152,000 by 1983, a rise of more than 64 percent over a ten year period.

At the same time the increasing role of central services has meant that Asir's other three urban places in 1974 (Almadhah, Muhayil and Dhahran Aljanub) and several large and well placed villages have grown and begun to take on more urban functions. Such places include Alnimas, Ahad Rufaydah, Tathlith, Sarat Abidah, Sabt Alalayah and Almajardah. Each still had less than 10,000 population in 1983 but they are becoming major central places in various parts of Asir region, to form a second tier of urban places below that of the three main towns of Abha, Khamis Mushayt

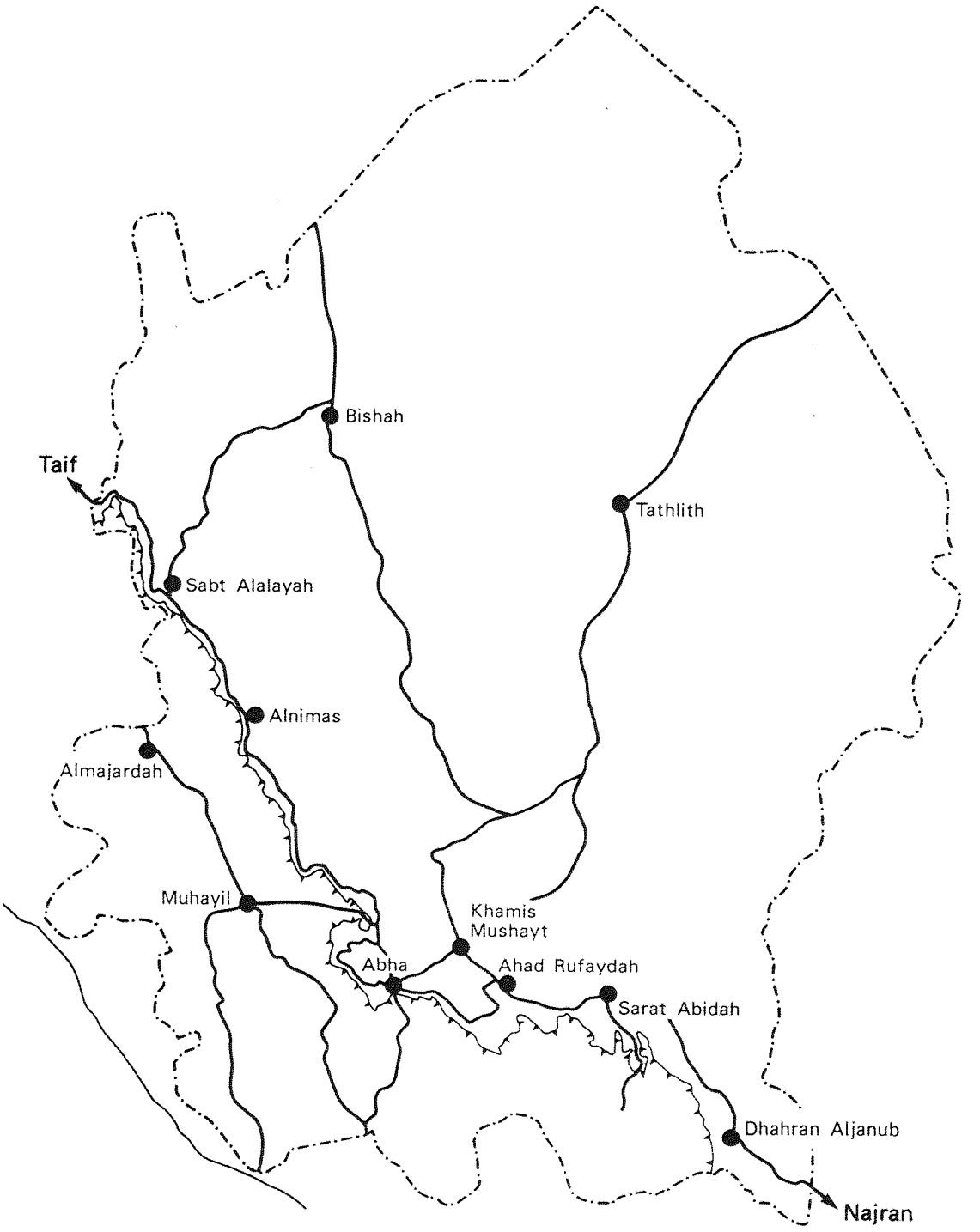
and Bishah. Fig. 4.12 shows the distribution of the urban settlements in the region in 1986. It is obvious that most are in the mountains, near the escarpment, as a result of the aggregration of rural population in this area, as well as the concentration of recent development along the main highways, particularly the Taif-Najran route.

Table: 4.13
Urban growth in Asir between 1974 and 1983.

Urban Centres	Population 1974*	Population 1983**	Percent increase
Khamis Mushayt	48,197	62,000	29
Abha	30,354	58,147	92
Bishah	14,040	32,000	128
Muhayil	3,304	6,000	82
Dhahran Aljanub	2,851	10,000	251
Almadhah	3,224	1,700	- 47
Alnimas	1,246	12,000	863
Sabt Alalayah	1,952	5,500	181
Ahad Rufaydah	888	7,500	745
Sarat Abidah	963	3,500	263
Tathlith	407	2,500	514
Almajardah	463	2,500	440

Source: * The 1974 Census.
** The Asir Emirate Survey, 1983.

The figures for urban growth in Asir region are shown in Table 4.13. The rapid absolute increase in Asir's urban population between 1974 and 1983 can be seen to focus on the small urban centres like Alnimas (with a 863 percent increase), Ahad Rufaydah and Tathlith. Even so the largest numerical increases were seen in the largest towns. Several places more than doubled their population in this period. One of the main reason for this current urbanization in the small urban places are the recent development of many services (private and public) that occurred in these places to serve the large number of villages around them. Almadhah is the only place which lost population. It had 3,224 people in 1974 and only 1,700 in 1983. This decline is probably



Source: Compiled by the Author

Figure 4.12 Urban settlement in Asir Region, 1986

related to the fact that this area is surrounded by large nomadic populations which would have been counted with Almadhah's population in the 1974 Census, but probably not in the 1983 estimate.

In fact the urban settlements in Asir region are so new that many retain the character of the villages from which they originated. For example, the city of Abha has grown up from a group of villages which had a district market known as a Tuesday market. This still exists today in the centre of the city. This village origin of Abha was noted by some earlier writers such as those of the Admiralty Handbook (1946) who concluded:

> "Abha, a small town on the right bank of the wadi Abha or wadi Bisha, it built a large market-place dominated by a fortress ..... Abha, includes four villages, Manazir, Muqabil, Khisha and Qara, the first named being the largest." (p. 564).

Also Philby (1952) who recorded his first visit to Abha in 1947 has indicated that:

> "Abha! a great name in Arabian history but little more than a village after all- in actual fact a group of villages which had expanded into each other on three sides of a hollow square to form a provincial capital." (p. 156).

Superimposing urban functions on to what are often no more than village structures creates many problems for these towns, including the provision of new road systems, the creation of new housing, commercial and administrative functions and the loss of good farmland. In this way these newly evolving central places are the part of the settlement pattern in Asir which is changing most rapidly as public services are expanded in them to serve the surrounding rural communities. The provision of these services in Asir will be considered in chapters six and seven, after the next chapter which reviews the region's socio-economic conditions.

CHAPTER FIVE

THE REGION'S SOCIO-ECONOMIC STRUCTURE

5.1 ECONOMIC STRUCTURE

5.1.1 INTRODUCTION

It has already been stated that the only detailed and reliable source of information on the population and the economic activities of Asir has been the 1974 census. But as it is now fourteen years old and there have been major changes in the region's economic structure during those years not too much reliance can be placed on its conclusions. Nevertheless, this section reviews the socio-economic conditions in Asir largely on the basis of the census with later information added where available.

The 1974 census showed that 26.7 percent of Asir's population aged twelve years and over was employed, mainly in agriculture. Foreigners made up 2.7 percent of this labour force. Table 5.1 shows that 72 percent of the total labour force was employed in agriculture which has been the traditional basis of the Asirian economy. Farming remains the mainstay of the local economy although jobs have been lost recently in this area with an estimated average annual decline of farm production of 2.9 percent between 1975 and 1980 as small farmers found better paid jobs in the towns and other parts of the economy (Fourth Development Plan, 1985).

Social services in 1974 provided 12 percent of total employment but by the mid 1980s this sector was much larger. Construction has also been a major growth area in employment. Whereas the 1974 census showed this made up 6.6 percent of employment it had risen in the Kingdom to over 21

percent by 1985 (Fourth development plan, 1985). Asir probably shared in some of this growth. Mining and manufacturing remain small as employers with less than 1.5 percent of total jobs in 1974. Large percentage increases of about 19 percent per year were expected in these under the 1980-85 plan, but these would still not represent many jobs.

Table: 5.1
Employment by economic activity and sex in Asir in 1974. (percent)

Sector	Male	Female	Total
Agriculture	59.49	12.45	71.94
Mining and Petroleum	0.04	-	0.04
Manufacturing	1.26	0.08	1.34
Elect., Gas and Water	0.18	0.03	0.21
Construction	6.56	-	6.56
Trade	3.18	0.05	3.23
Transportation	2.75	0.01	2.76
Finance and Real Estate	0.13	-	0.13
Social Services	1.51	0.61	12.12
Miscellaneous	1.60	0.07	1.67
Total	86.70	13.30	100.00

Source: The 1974 Census.

As would be expected the female share of the total labour force was small at only 13.3 percent. Most of this was engaged in farm work. The non-Saudi element in the work force was much higher in the key growth sectors of construction, trade and manufacturing as well as, to a lesser extent, in services where much of the Asirian population lacked the necessary skills in 1974. Only in the predominant agricultural sector was the foreign element poorly represented with only 1.6 percent of the total workforce made up of non-Saudis, nearly all of these being Yemenis.

Reference has already been made in the last chapter to the high levels of illiteracy found in the Asirian

population in 1974. Table 5.2 provides more detail on the educational level of the workforce in 1974 and helps to explain its lack of skills and the resultant role of foreign labour. Nearly 77 percent of the total workforce was classed as illiterate. Under 7 percent had enjoyed any formal schooling. Less than 1 percent held university degrees and most of these were engaged in educational and medical services, most often as foreign workers. While the situation has improved dramatically in Asir since the 1974 census the lack of education and skills of the local workforce will remain a problem with the older parts of the workforce for many more years.

Table: 5.2
Educational level of the workforce in Asir, 1974.

Educational Status	Employed	Percent
Unschooled		
Illiterate	138,053	76.89
Read only	7,748	4.32
Read and write	19,396	10.80
Attended school		
Elementary level	6,187	3.45
Intermediate level	2,370	1.26
Secondary level	3,475	1.94
University degree	1,780	0.99
Unknown	628	0.35
Total	179,537	100.00

Source: The 1974 Census.

5.1.2 AGRICULTURAL SECTOR

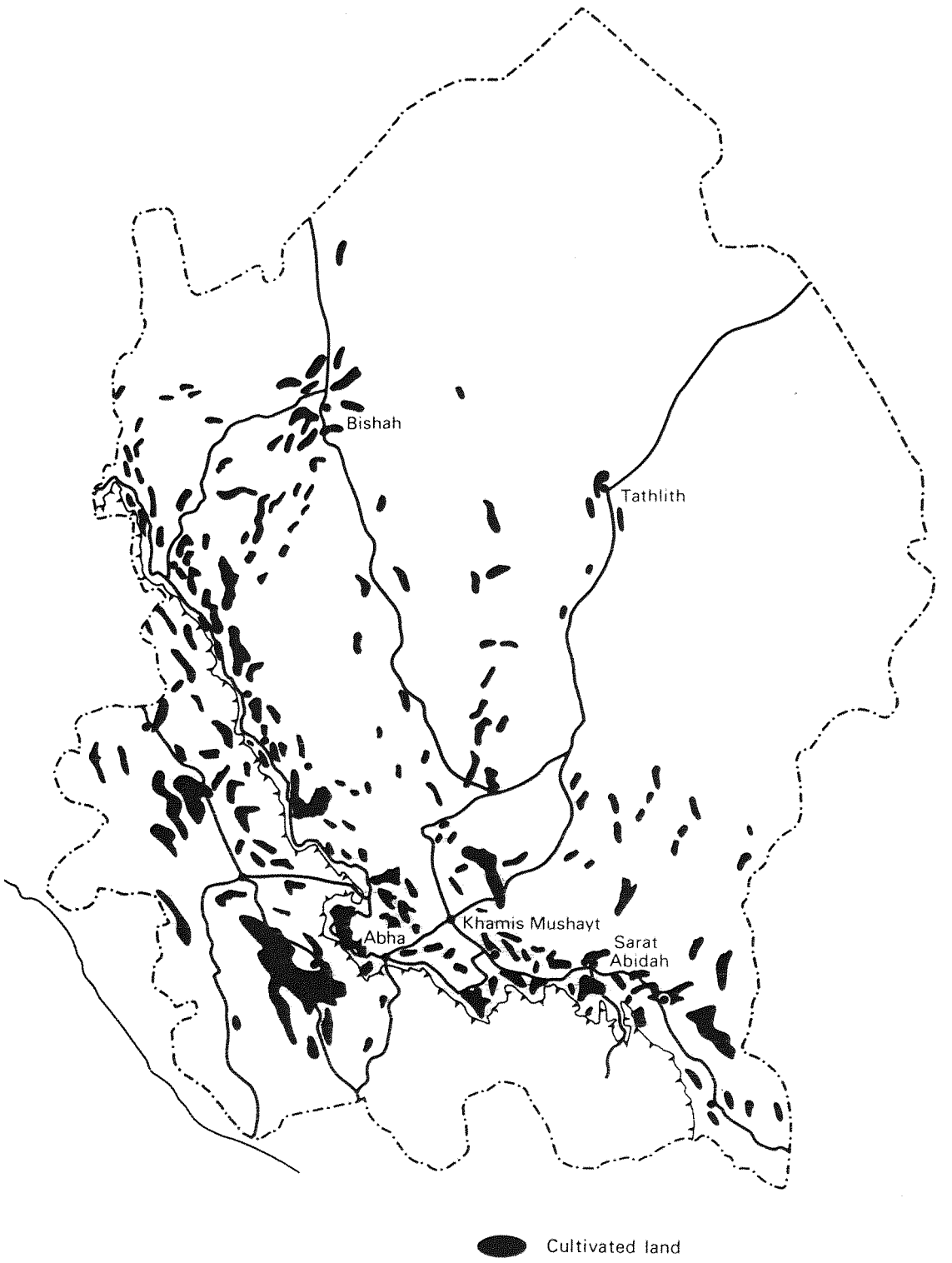
Because of its isolation Asir region was, until recent years, self-sufficient in food production. It was possible for the people to produce their basic foodstuffs because the area generally has a favourable climate for agriculture. It has cultivable land for grains and other crops in the wadi

basins within the mountains and in the Tihama foothills and there are several fertile oases in the dry eastern part of the region.

While there has been some decline in agricultural activity recently as improved communications have made food imports easier, and as some of the rural people have shifted into other more profitable occupations than farming, Asir remains an important farming region. The 1974 census showed that 129,267, or 72 percent of the total labour force was employed in agricultural activities. The 1981/82 Agricultural Census showed that there were 52,277 holdings in Asir with a total of 639,989 donums of land under crops. This made up about 11 percent of the total cultivated land in the country. But many of those farms are small and part-time. Average farm size is only twelve donums with a mean of 1.9 parcels per farm in 1985. More than 36 percent of the farmers in 1981/82 were engaged in other jobs as well.

Fig. 5.1 shows the distribution of cultivated land in Asir. It can be seen that most of the land is found scattered across the basins and valleys in the mountains and the Tihama foothill zone where the most rainfall and better soils are found. In these areas the nature of the topography and the need for water supply have led to a variety of agricultural techniques being applied by farmers to make the best use of the conditions. These range from simple flood irrigation in parts of the flat Tihama valleys to complex irrigation systems on terraces in the mountains. Also there is considerable variety in types and seasonality of crops grown.

The predominant type of farming is, however, terrace irrigation of grain crops. Most of the terraces are of small size and enclosed by walls to keep the soil, and most of the runoff, in place on the steep hillslopes. These hill



Source: Sogreah Investigation 1984

Figure 5.1 Cultivated land in Asir Region, 1984

terraces are rainfed together with supplementary water directed from the upper hillslopes through long ditches which cross the cultivated lands. The lower terraces close to wadi bottoms may also be fed with water from minsim, or channels fed from dykes which block wadi runoff in order to lead it onto useful land beside the wadi floor. This system of irrigation is particularly common in the wadis of the Tihama foothills. In some areas, particularly to the east in the drier plateau districts, farming and household supplies rely more on water from wells dug into the wadi floors. In 1980 there were estimated to be over 11,050 wells in the region, many of them in the eastern wadis, but uncontrolled over-exploitation of these groundwater sources is leading to a greater unreliability of supply and its increasing salinity (El Khatib, 1980).

Table: 5.3
Estimated area in dunums and production in tons of some grain crops in Asir, 1983-85.

Crops	1983/84		1984/85	
	Area dunums	Prod. tons	Area dunums	Prod. tons
Wheat	60,763	10,680	92,643	14,147
Sorghum	101,256	15,636	41,670	5,714
Sesame	23,390	1,839	16,166	1.380
Barley	2,098	517	4,105	608
Millet	6,904	1,247	7,189	1,143
Maize	379	68	706	119

Source: The Statistical Year Book, vol. 21, 22, 1985,1986.

As Table 5.3 shows grain crops are the main products of farming in Asir although a range of fruits and vegetables are also produced. Grains occupy about 80 percent of all crop land in the region. Production varies widely from year to year depending on rainfall. In tonnage terms sorghum and wheat are the two common grains, the former being very

widespread both as a basic food and used also as an animal feed especially in the Tihama. Wheat is more confined to the mountains where it can be a rainfed crop in areas receiving more than 350 mm of precipation a year but it is also irrigated in the eastern wadis. It is grown almost entirely for human consumption. Much less common are barley, millet and maize, mainly grown as animal feeds.

A number of fruit and vegetable crops are also grown in various parts of Asir. Table 5.4 shows the output levels of some fruit and vegetable crops in the region during 1983/84 and 1984/85. It can be seen that the most productive of these is the date palm for which Bishah, one of the larger eastern oases, is famous. In 1984/85 date output was estimated at 53,997 tons and exceded that of the main grain crops in the region in output and rivalled them in area. In the Tihama banana and lemons are grown while citrus, grape and pomegranate are found in the mountains. Other vegetables include tomato, onion, cucumber and eggplant.

Table: 5.4
Estimated production in tons of some fruit and vegetables in Asir, 1983/85.

Crops	1983/84	1984/85
Dates	54,120	53,997
Grapes	2,613	2,164
Citrus	243	319
Tomatoes	5,628	6,278
Squash	562	608
Eggplant	30	367

Source: The Statistical Year Book, vol. 21, 22, 1985,1986.

Because, apart from dates, grains are the predominant crops and can be grown in either summer or winter, almost as much farmland is in use in the drier part of the year as in the cooler, wetter winters. Nearly 30 percent of Asir's

cropped area in 1984/85 was accounted for by summer crops, mainly sorghum and millet, compared with 56 percent as winter crops, principally wheat, with some barley and vegetables. The 24 percent of land given over to perennial crops are the fruit growing areas.

Asir is also an important area of the Kingdom for animal keeping with extensive natural pastures, particularly in the mountains and Tihama, as well as fodder production of alfalfa, sorghum and barley. Table 5.5 shows the estimated numbers of stock and poultry in the region in 1983/84 and 1984/85 which represented about 22 percent of the total livestock industry of the Kingdom. Sheep and goat were the most common stock.

Table: 5.5

Estimated numbers of livestock and poultry in Asir, 1983/84 and 1984/85.

Livestock	1983/84	1984/85
Sheep	1,414,875	1,468,264
Goat	816,094	800.723
Cattle	38,258	42,858
Camel	51,937	55,731
Poultry	32,243	42,225

Source: The Statistical Year Book, vol. 21, 22, 1985, 1986.

Virtually all sectors of the farm economy in Asir suffer from poor productivity and this is the result of several factors. These include limited soil fertility which is seldom enhanced by the use of artificial fertilizers; scarce water resources especially where reliance is placed on rainfall which is often unreliable and has to be supplemented by wadi irrigation which, similarly, is not always available; traditional methods of cultivation using draught animals, and a general lack of use of modern

techniques such as improved crop varieties to suit the relatively harsh conditions. Further reductions in overall productivity in recent years have resulted from decreases in farm labour as the spreading oil wealth in the region has made farm work less attractive.

On the other hand improved communications and the introduction of machinery and more intensive techniques on some farms has encouraged a few farmers to grow crops such as fruits and vegetables, for the increasingly prosperous urban markets within and beyond Asir. Unfortunately no government-sponsored studies of Asirian agriculture have yet been made. No plans have been drawn up to support and enhance the farm economy under these changing conditions. Not only is this needed to help tackle the poor level of output per dunum but also to raise farm incomes which remain low, and to encourage enlargement of many holdings.

5.1.3 INDUSTRIAL SECTOR

Industialization in Asir region is in the early stage of development. The manufacturing sector is a relatively small share in terms of the regional income and the number it employs. In 1974 the total employees engaged in manufacturing was only 2,405 (1.3 percent) of the total employees in the region. Their number is growing but many problems face manufacturing in the region, particularly the lack of industrial raw materials and cheap energy resources, a lack of skilled labor and the poor physical infrastracture.

The existing manufacturing is mainly dominated by firms heavily dependent on imported industrial raw materials. Most of these types of activities are located in the main urban centres of Abha and Khamis Mushayt. The most recent detailed

information on manufacturing establishments in the Kingdom in 1981 showed that there were only 1,021 manufacturing establishments in Asir in 1981 employing only 4,219 workers. This represented only 7 percent of the total manufacturing enterprises in the country, and only about 3 percent of the total manufacturing employees. The majority of these firms were small scale.

Table 5.6 shows that about 22 percent of total establishments employed only one worker and 53 percent employed two to four workers. Only thirteen firms employed more than 20 employees. 31 percent of the firms manufactured textiles, clothing and leather products. Another 31 percent were engaged in manufacturing fabricated metal products and machinery. Fifteen were engaged in food and beverages industries, mainly bakeries, dairy products and soft drinks. Firms which manufactured brick, blocks, cement and glass, wood and furniture were also represented. It is of interest to note that the 1981 census of manufacturing shows that more than 87 percent of the total employees in Asir's industrial firms were non-Saudis, and the 13 percent of Saudi employees were largely engaged in managerial work. All companies are required to have Saudi participation in ownership.

The construction industry in Asir is relatively small compared with other regions of the Kingdom, but has grown in response to expanding development. In 1974 there were only 11,770 employees in the industry in Asir, which equalled only about 6 percent of the total workforce in the region. The 1981 census of establishments showed that there were only 80 constructional firms which was only 1.4 percent of the total constructional establishments in the whole Kingdom. These firms employed about 2,000 workers, 90 percent of them foreign workers.

Table: 5.6

Number of manufacturing firms by employment size in Asir, 1981.

Manufacturing Type	No. of firms by employment size					Total firms	percent
	1	2-4	5-9	10-19	>20		
Food, Beverages and Tobacco	57	79	15	2	1	154	15.1
Textiles, Clothing & Leather	77	206	33	1	-	317	31.0
Wood, Wood products and Furniture	9	33	26	12	-	80	7.8
Paper Products and Printing	-	4	7	5	-	16	1.6
Bricks, Blocks, Cement and Glass	6	29	49	21	4	109	10.7
Fabricated Metal Products & Machinery	61	176	64	8	7	316	31.0
Other Manufacturing Firms	14	10	2	2	1	29	2.8
Total	224	537	196	51	13	1,021	100.0
Percent	21.9	52.6	19.2	5.0	2.3	100.0	-

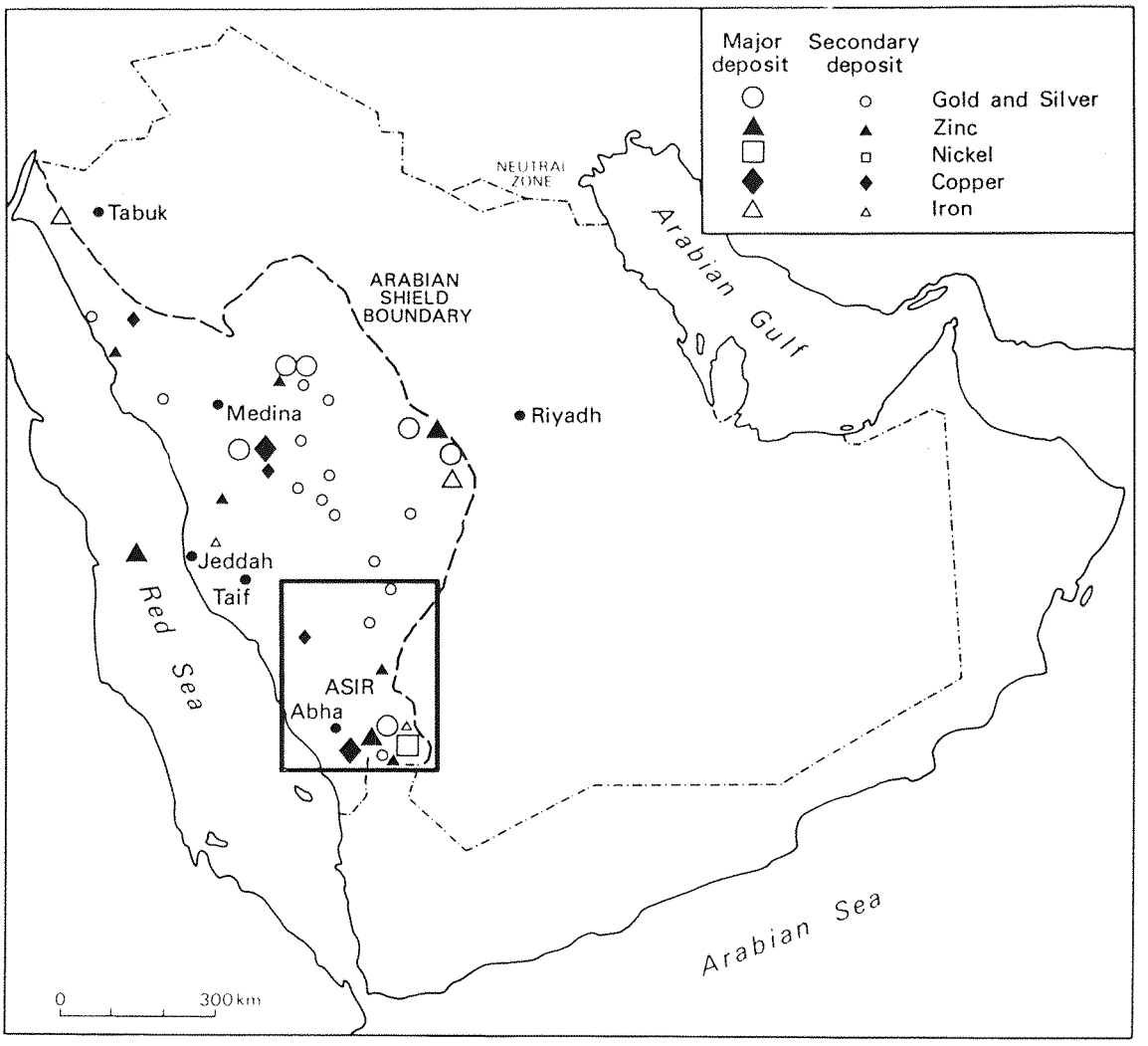
Source: Census of Private Establishments, Central Department of Statistics, 1981.

Local materials for constructional use have been exploited to some extent because of their widespread suitability and the cost of importing materials. Notably quarries have been opened up near Abha and Khamis Mushayt for cement, concrete block and brick. Road constructional stone is found in Wadi Bishah and other places in Asir but is not yet widely exploited.

Because it is part of the ancient basement complex of the Arabia Shield, Asir is believed to be rich in metal ores and other minerals. These remain largely unexplored and almost totally unexploited. Fig. 5.2 shows these potential mineral sites according to recent investigations by the General Directorate of Mineral Resources in Jeddah. Uncertainty as to their true economic value remains. Most notable of these sites are: copper and silver deposits at Jouan Mountain about 100 km east of Khamis Mushayt; zinc and copper deposits at Almasanh, 150 km south east of Khamis Mushayt; titanium, iron and nickel in Wadi Wassaf and Aqubut Kutan about 150 km east of Abha; copper, zinc, gold and silver in Wadi Bishah; and copper in the Katan area 100 km south of Abha.

5.1.4 SERVICES SECTOR

Unlike many other developing countries, the Saudi economy is, to some extent, a service dominated economy. Services represented 68 percent of the non-oil gross domestic product in 1985 (Fourth development plan, 1985). This is a result of the fact that in the past few years enormous oil revenues have raised the income of the population and in turn greatly increased the demand for services as well as goods. The services sector is an important source of employment and income to a large



Source: Fourth Development Plan 1985, p. 167

Figure 5.2 Potential mineral sites in Asir, 1985

section of the Kingdom's population. More than 42 percent of the country's employment was based on services in 1985.

But in Asir the services sector is rather small in terms of its contribution to the regional income and employment. This is because the region is traditionaly agricultural and rural, and most of the large governmental, commercial and financial establishments that create most service employment are concentrated in the large urban centres of Riyadh, Jeddah and Dammam. Even so the services sector provided over 18 percent of total employment in the Asir region in 1974. While this is small compared with the national average of more than 38 percent at the time of 1974 census, there has clearly been substantial growth in services in Asir during the last fifteen years.

In 1981, there were 5,938 private service establishments in Asir, which equalled only about 5 percent of the total private service firms in the country. These private establishments employed 11,026 workers, which accounted for 2.4 percent of service employment in the Kingdom. This is a relatively small proportion of employment in services when one consideres that the population of Asir represents more than 10 percent of the Kingdom's population.

The number of service establishments by their size and employment is shown in Table 5.7. It can be seen that the majority of these establishments are very small in size. More than 92 percent employed less than five workers. Only 2 percent (115 Firms) employed more than ten workers. More than 68 percent of the total service establishments in Asir in 1981 were engaged in retail services, and 97 percent of these had less than five employees. Personal and domestic services were next most important with about 12 percent of the total firms followed by transport services, hotels and restaurants each with 7 percent of employment.

Table: 5.7

Number of private service establishments by employment size in Asir, 1981.

Service Activity	No. of firms by employment size					Total Firms	percent
	1	2-4	5-9	10-19	>20		
Wholesale Trade	46	103	37	9	1	196	3.3
Retail Trade	2,550	1,366	109	22	6	4,,053	68.3
Transportation	258	115	10	1	3	387	6.5
Restaurants & Hotels	68	239	74	9	7	397	6.7
Real Estate and Business Services	61	62	22	12	6	163	2.7
Recreational and Cultural Services	13	18	3	1	-	35	0.6
Personal and Domestic Services	163	401	91	16	1	682	11.5
Other Services	6	4	4	7	4	25	0.4
Total	3,165	2,308	350	87	28	5,938	100.0
Percent	53.3	38.9	5.9	1.5	0.5	100.0	-

Source: Census of Private Establishments, Central Department of Statistics, 1981.

Service establishments and the employment they create are highly concentrated in the few urban centres of Asir. Khamis Mushayt, Abha and Bishah, the three main towns, had more than 81 percent of total service firms in Asir in 1981, mainly commercial, governmental and financial firms. Khamis Mushayt was largest of those service centres with more than 42 percent of the total. The remaining 19 percent of service establishments in Asir was distributed among the seven other smaller centres of Muhayil, Alnimas, Ahad Rafaidah, Sarat Abidah, Tanumah, Dhahran Aljanub and Tathlith.

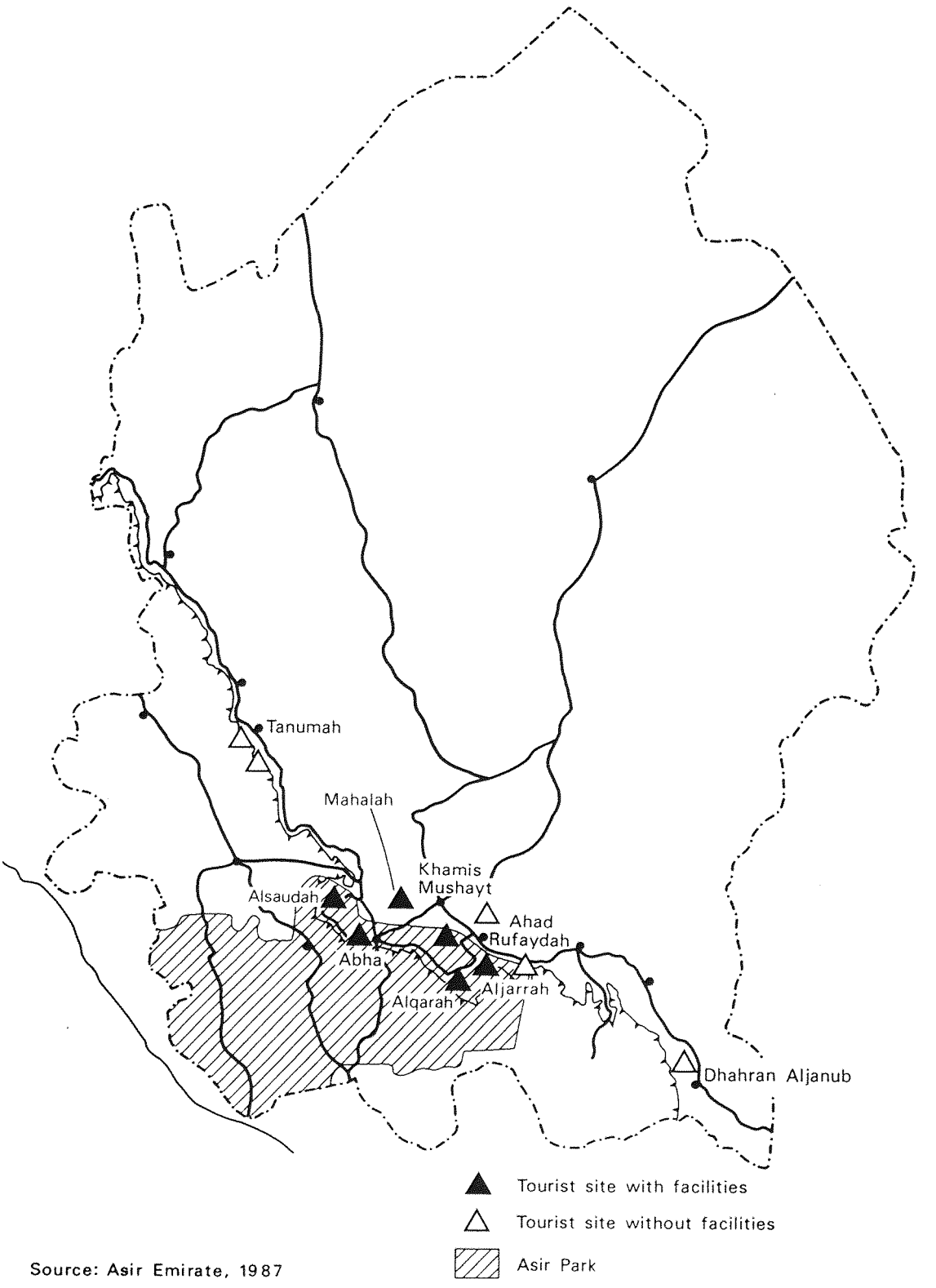
Much of this service development is very recent, even since 1981 for which the most recent data is available. That data is extremely broad scale so that no detail is available on retail and other services of the region. One example of recent service expansion is the growth of the tourist industry in the region. The combination of an attractive climate, a uniquely varied topography and a rich historical background provide Asir with a great potential to develop tourist services, the beginnings of which was marked by the establishment of the first National Park in 1980.

This is based on the rich varied mountain, escarpment and Tihama area between Abha and the coast. Here the main escarpment falls precipitously from about 3,000 metres to the Tihama valleys. The scarp is richly vegetated, especially with juniper forests and is a major wildlife haven. Azzi (1980) has described this part of Asir as Arabia's green corner. Close to the escarpment are many colourful mountain slopes, basins and wadi bottoms with their characteristic banks of terraced plots and scattered tiny villages rich in traditional buildings of stone and mud-brick. Several of Asir's main towns and centres of communication, at Abha, Khamis Mushayt and Alnimas, are sited close by.

As a first contribution to the conservation and exploitation of some of this area's tourist potential the Asir Emirate jointly with the Ministry of Agriculture have established basic tourist facilities including picnic and camp sites, hiking trails and displays at Alsawdah, Alqarah, Aljarrah and Mahalah (Fig. 5.3). Eventually the National Park will cover 455,000 hectares of the escarpment zone and Tihama. It will protect this unique set of landscapes, provide a basic infrastructure of facilities for tourists and contribute to the economy of the region.

Most of the rest of Asir's population lives close to the escarpment so that their access to Asir's main tourist landscapes is relatively easy. Because this same zone has for long been the focus of settlement it is also the area richest in historical and archaeological sites with tourist potential, although many of these remain undeveloped and in need of conservation. These include the old fortress in the centre of Abha, the Pre-Islamic town of Jarash which was destroyed in the 7th century A.D, the ancient rock drawings at Aldarah, near the Abha-Khamis Mushayt road, and several old Turkish forts.

At present, the number of persons visiting Asir for tourist purposes is not large, although during the summer of 1987 more than 20,000 families from the Arabian Gulf States visited Asir, as well as large numbers of families from various parts of the Kingdom (Al-Riyadh, 1987). There is no data available about the number employed in tourist services, nor its contribution to the regional income. However, the events of the 1987 summer indicated that all hotels, flats and parks facilities in Asir were fully booked (Al-Riyadh, 1987).



Source: Asir Emirate, 1987

Figure 5.3 The tourist resorts in Asir Region, 1987

5.2 TRANSPORT AND COMMUNICATIONS

5.2.1 INTRODUCTION

Basic to the development of the economy of Asir is improved transport and communication so that these are outlined in the remainder of this chapter. Before, 1962 there were no metalled roads in Asir. The only roads were dust roads opened by the tractors and trucks of the Ministry of Transportation or by the local communities. They were rough to travel on and were affected by rain which would often destroy them in the rainy season where trucks usually got stuck in the mud. Because of the poor road network most movements of people and goods were restricted to short journeys by villagers to their neighbouring settlements or to the nearest weekly markets, where they could exchange goods. Most villagers led lives based on near subsistence. Most journeys were made on foot or by animal which was the main means of moving goods and people within the region.

Few longer distance journeys were made although the local roads from village to village did connect up, so that it was possible to move from the escarpment area to the Tihama area, and even to the Hijaz region in the north. Movement along these routes had been described by Cornwallis in 1916 and other Europeans travellers. Cornwallis also noted that travel was difficult because of the local hostility

> "Travelling in Asir is apt to be a dangerous matter, not through any natural causes, but on account of uncontrolled and predatory character of the tribes. Natives, therefore, generally attach themselves to some armed caravan before venturing outside their own boundaries." (p. 104).

In the first half of this century and before the present spate of modern road construction, there was scarcely a road

network as such across Asir. One main route linked the well-settled mountain area with the Tihama between Abha and Muhayil through Wadi Tayya. This was the road the Turkish in the last century used to bring supplies from Alqunfudhah port to their headquarter garrison in Abha. The main north-south escarpment route was that from Abha north to Taif and south to Dhahran Aljanub and into the Yemen. This route goes through the mountainous area and many villages so that it was a more peaceful road for caravans and pilgrims. The common means of transport along this route was by donkey and camel.

The most important trade route within Asir region was that between Abha and Bishah via Khamis Mushayt. This 250 km link was regularly used by the caravans of date traders and by travellers from the Central and Eastern regions to the Southern region. But for many years it was also rather dangerous to use because of the brigands along the route. As Cornwallis noted in 1916:

> "The Abha to Bishah road sees considerable traffic during the date season. It is traversed only by large and well armed carvans on account of the robber bands of nomads." (p. 105).

No other roads existed except for rough tracks linking neighbouring settlements. Access to other part of Arabia was very limited. A journey by truck from Abha to Riyadh (a distance of about 1100 km) would take between two and four weeks of cross desert travel.

5.2.2 ROAD DEVELOPMENT

Road construction in Asir, as in the rest of the Kingdom, has made remarkable progress in recent years. Saudi Arabia had been linked up by about 8,000 km of paved roads and 3,500 km of unpaved roads by the end of 1970. Many more

links were added after 1970. By the end of 1985 the total length of paved roads had reached about 33,000 km with an additional 38,000 km of earth-surfaced roads.

Neverthless, the construction of a road network in Asir lagged behind that of other regions for many years. For instance the total length of paved roads in Asir in 1970 was 269 km or only about 6 percent of the total paved roads in the Kingdom at that time. However, by 1987 the total length of paved roads in Asir was about 2,300 km or about 7 percent of total paved roads in the Kingdom in 1985. It could be argued that this is a reasonable network given that Asir represents about 4 percent of the area of Saudi Arabia.

The first paved road to be laid in Asir was the 27 km between Abha and Khamis Mushayt, the two main towns, in 1964. A nine km spur to the airport was added later. A year after the Abha-Khamis Mushayt road was completed, work commenced on the link south between Khamis Mushayt, Dhahran Aljanub and Najran, a total length of 236 km. The first section around Dhahran Aljanub was completed by 1970, and the last parts in 1973. This road was a great benefit to the many village settlements in the escarpment area by linking them with the two main towns in the region, Abha and Khamis Mushayt, and providing them with additional access to services and goods.

During the last fifteen years, 27 other road construction projects have been completed. The main aims of these projects were to provide more linkages between the major populated areas and at least one direct route between each of Asir's main towns and other regions in the country. The programme of 2,300 km of road construction undertaken in the region from 1970 to 1987 is shown in Table 5.8. This created the network as shown in Fig. 5.4 at a cost of SR 4,747 million.

Table: 5.8

Roads constructed in Asir from 1970 to 1987.

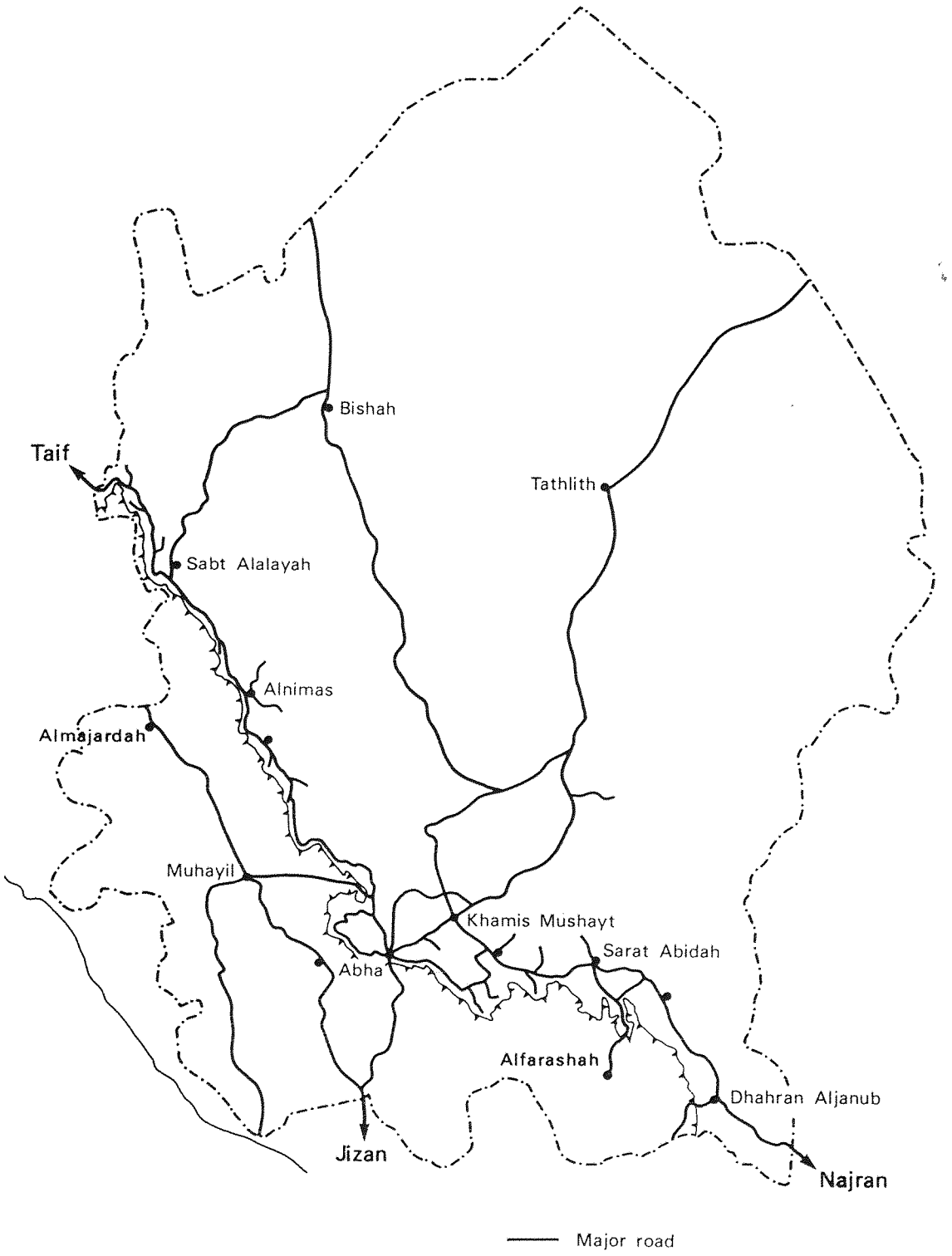
No.	Road Projects	Const. Compl.	Length km	Cost SR million
1	Khamis M-Dhahran			
	Aljanub-Najran	1972	236	240.0
2	Abha-Belasmar	1973	97	123.0
3	Bilasmar-Sha'ar	1979	112	176.0
4	Sha'ar-Wadi Wlf	1979	89	233.0
5	Aldarb-Kilo. 50	1974	50	134.0
6	Abha-Almahalah	1974	10	4.0
7	Dhela' Descent	1979	29	366.0
8	Abha-Alsawdah	1975	37	80.0
9	Jebel Nahran	1976	8	15.0
10	Abha-Alqarah	1977	29	23.2
11	Jebel Bihan	1979	57	130.0
12	Circular Road of Abha	1978	19	68.0
13	Abha-Khamis Mushayt			
	Two way fast road	1978	24	51.0
14	Khamis M-Military T.	1978	16	95.0
15	Muhayil-Almajardah	1979	75	102.0
16	Sabt Alalayah-Bishah	1979	124	138.0
17	Tanumah-Alqararh	1978	12	14.0
18	Alnimas Connection	1980	22	52.0
19	Aljawwah Descent			
	1st Part	1982	109	523.8
20	Sha'ar Decent	1984	68	374.5
21	Abha Connections	1984	62	119.2
22	Khamis M-Almadhah-			
	Tathlith-Khamasin	1986	426	584.9
23	Alderb-Rijal Almah-			
	Muhayil	1987	154	502.0
24	Bilasmar Connections	1986	92	73.5
25	Tmniuh-Alunfah	1983	9	7.2
26	Khamis M-Bishah	1987	269	356.3
27	Dhahran Aljanub-Alb	1987	28	160.7
-	Total	-	2,263	4,746.8

Source: The General Directorate of Asir Transportation, 1987.

The most important recent project of road construction has been that between Taif-Abha-Jizan with a total length of 753 km. This road is known locally as "Prosperity Road", because it serves about 420 villages and towns with a total population of about 391,000 (Ministry of Transport, 1980). It provides the south with the only all-weather link to Hijaz region. It links the four provinces of Taif, Al Bahah, Asir and Jizan to Hijaz. In Asir it runs along the top of the mountain range from north of Sabt Alalayah to Abha where it descends into the Tihama to continue to Jizan. Work on the project was started in 1967 and took eleven years to complete at a total cost of SR 1,602 million.

During the Second and Third development plans (1975-1985) several other links were created between the escarpment and the well-populated areas of the Tihama. Beside the Abha-Jizan link referred to above, two more important projects to build roads down the escarpment were launched at the end of the 1970s. The 68 km Abha-Muhayil link through the Sha'ar descent (Aqbat Sha'ar) of the escarpment connects the Muhayil district and its surrounding villages with the main centres of Abha and Khamis Mushayt and with the Taif-Abha road. From Muhayil the road also connects to the Jizan route to give that part of the Tihama a link to the coast. This road was estimated to serve about 75,000 inhabitants in Muhayil and Almajardah subemirates when completed in 1984. Because of the descent it was a difficult and costly road to build. The construction involved 32 bridges and eleven tunnels and cost SR 375 million.

Another spectacular paved road runs down the escarpment near Sarat Abidah into the Alfarashah area in the Tihama, linking the Qahtan population in the Tihama with the mountain settlements, so as to reduce their isolation and to



Source: Asir's Directorate of Transportation 1987

Figure 5.4 Major road network in Asir Region, 1987

accelerate development in this area. The construction of this 109 km road started in 1979 and was completed in 1983. It involved building 40 bridges and 23 tunnels at a total cost of SR 524 million.

Other important road projects completed in the region by 1986 included the 426 km road between Khamis Mushayt, Tathlith and Khamasin which cost SR 585 milliom, and the Khamis Mushayt-Bishah linkage with a total length of 269 km. These two roads now provide more direct links to Riyadh and the Eastern region.

Apart from the main roads many agricultural roads or earth-surfaced roads now link villages with each other and with their main centres. About 9,000 km of dust roads were completed by thirteen road building teams in Asir by 1985. However, many villages, particularly in the Tihama areas, are still unconnected by even this type of road, leaving them with limited accessibility. According to the General Directorate of Transportation in Asir another 10,000 km of agricultural roads are needed in the next few years to reach these villages.

With the development of this network and with rising oil wealth, there has been a rapid increase in car ownership in Asir as in the rest of Saudi Arabia. There were only 60,000 vehicles in the country in 1970, but this total had increased to more than three million by 1985 which caused heavy traffic problems particularly in the large cities. No data is available on the growth of vehicle ownership in Asir. 43,200 vehicles were registered by the police traffic department in Abha by 1981, but this excludes the many vehicles used in Asir registered in other cities, especially in Jeddah and Riyadh. This could double the number of vehicles in use. It was estimated in 1979 that the Abha-Khamis Mushayt urban area had 90 vehicles per 1,000

inhabitants with 130 vehicles per 1,000 in the rural area (Scan Plan, 1982). On the main urban links between, for example, Abha and Khamis Mushayt there is now so much traffic that the roads are already in need of improvement.

5.2.3 AIR TRANSPORTATION

While the national and local road network has greatly aided the movement of goods and people, the vast area of Saudi Arabia, with its large empty spaces, has needed ths stimulus of a good system of air transport for more rapid connections between its major centres. Air transport has made big strides in recent years in Saudi Arabia. As a result the country now has 23 airports and a fully developed system of connecting services.

In this system Asir is served by two small airports, at Abha and Bishah. The first regional airport in Asir was located at the Khamis Mushayt Royal Saudi Air Force Base in 1964. However its 3,850 metres runway was only able to take medium size jets. A little more than a decade after regular flights started from this base a new airport was opened between the two urban centres of Abha and Khamis Mushayt. Its runway is designed to accommodate the heaviest commercial passenger jets.

The relatively early development of air services from Abha airport, before any long-distance road existed in the region, stimulated the growth of commercial and government activity in Abha and Khamis Mushayt. During ten years (1970-79) more than two millions passenger movements took place through Abha airport. By 1984 these had increased to nearly one million movements per year. Then in 1975 a second airport was opened to serve Bishah and its surrounding villages because Bishah is 260 km from Abha and then still

lacked a proper road link.

Passenger air travel between Asir and the rest of the Kingdom continues to increase. Improvements have been made to the two airport runways and air and cargo terminals to cater for larger aircraft and the increasing number of passengers and goods, but Abha's facilities are still inadequate. Between 1981 and 1984 there was a 28 percent increase in passenger movement through Abha making it the fourth airport in Saudi Arabia in terms of number of movements.*

5.2.4 POSTAL SERVICES

While there has been much progress in the field of transport improvement, the postal services in Asir region have made rather less progress. In particular, the service is still lacking in facilities and a shortage of trained manpower and is still mainly confined to the more densely settled area. Before 1960, there were no post offices and no postal system in Asir region. The governmental offices had their own weekly messengers who dealt with official letters. But contact between Asirian people and their relatives and friends living in other parts of the region, or elsewhere in the country, relied entirely on personal visits or messages and letters delivered by friends.

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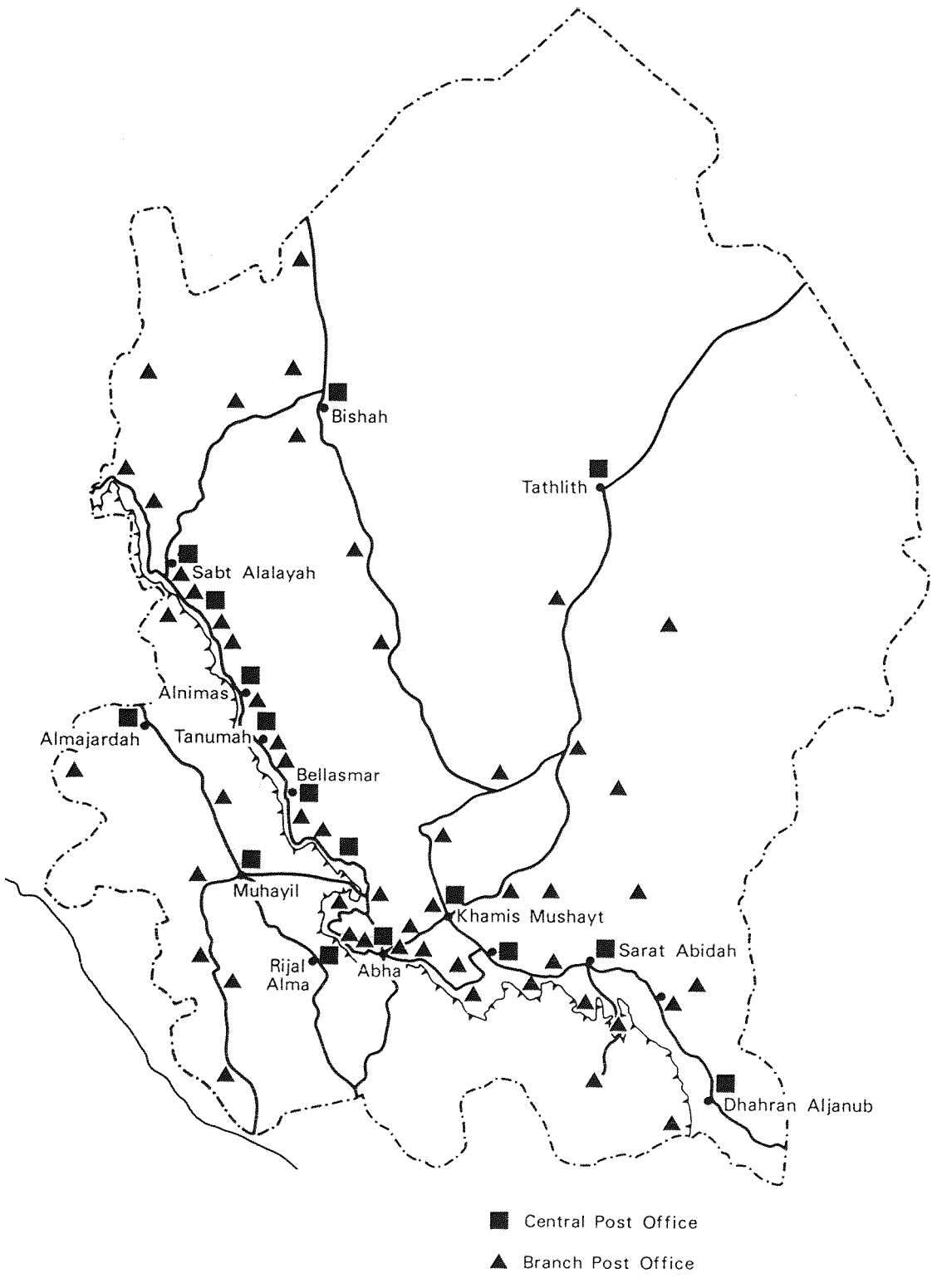
* Saudia Airline provides regular flights through both Abha and Bishah to and from most of the main cities in the Kingdom. For instance, in 1987, there were 28 flights a week from Abha to Jeddah, 25 flights a week to Riyadh and two flights a week to each of Bishah, Taif, Jizan and Sharourah. Passenger movements through Bishah airport are much smaller than through Abha. From Bishah airport there are nine flights a week to Riyadh, five flights a week to Jeddah, two to Abha and one to Jizan (Saudi Airlines Timetable, 1987). Partly to meet rising demand Saudia has employed larger aircraft. At the moment it uses three kinds of aircraft. Boeing 737 and Lockheed Tri-stars fly the route from Abha to Riyadh and Jeddah, and Airbus is used on all routes.

Since 1970 however, some mail services have been developed from post offices established in the main centres like Abha, Khamis Mushayt and Bishah. There are now sixteen central post offices which act as central distribution points, and from these the mail is distributed mainly to village post offices nearby. In 1972 there were only 22 post offices in Asir, but by 1983 the number had increased to 62. Their distribution is shown in Fig. 5.5. These post offices are located throughout Asir mainly in large villages and offer a limited mail services by truck to the surrounding villages. There is no mail delivery services to individual homes from these branch offices. 679 villages had mail delivery in 1983, but this leaves most of Asir's 3,328 villages (83 percent) still without postal service.

Even within the towns of Asir the postal service is limited. In 1983 there were only three post offices in Abha and two each in Khamis Mushayt and Bishah. Even in these towns there is no mail delively to houses, because there is no address system based on street names and house numbers. Instead, the post office box system was introduced in the central post offices of Khamis Mushayt in 1972, in Bishah in 1973 and Abha in 1975, and in a few other urban centres such as Alnimas, Sabt Alalayah, Sarat Abidah, Dhahran Aljanub and Muhayil in 1979. In this way private individuals and businesses can collect their mail at the local post office. Postal boxes in the region for mail collection have also expanded in number. By 1983 there were 5,250, but about 73 percent of them were in the towns of Abha, Khamis Mushayt and Bishah.

Despite these limitations of the system the use of the mail facilities in Asir region has seen rapid growth in recent years. Outgoing mails directed from Asir post offices to other parts of Saudi Arabia and the world increased by



Source: compiled by the author

Figure 5.5 The distribution of Post Offices in Asir Region, 1983

over 400 percent between 1970 and 1983. Table 5.9 shows that in 1970 the Asir post offices sent out 1,670,000 items of mails, about 45 percent being official and registered items. Another 50 percent were ordinary class mail and only 5 percent was publication or printed matter. By 1983 the total outgoing mails totalled 9,110,000 items, an increase of 446 percent over 1970. The ordinary mails have increased fastest to form 77 percent of the total, while official mail fell to only 18 percent because their number of items only doubled in that period of years. Clearly most of the growth in mail use has been by the ordinary population as this form of communication has become easier.

Incoming mails showed a similar growth (Table 5.9). In 1970 the total incoming mails were 1,677,000 items, a similar number to outgoing mail. About 45 percent of this was official and registered mail and 45 percent was ordinary mail. About 11 percent was printed matter. However in 1983 the incoming mails had increased by 649 percent over the 1970 figure. Again the growth of ordinary mail was the main area of expansion making up 77 percent of all the mail, a 12 fold increase over 1970, as the people made more use of the system. Relatively speaking there was much less growth in the official, registered and printed materials which were the types of mail mainly produced by government agencies and businesses.

5.2.5 TELECOMMUNICATIONS

Much emphasis has been placed nationally upon the development of a telecommunication network. As a result the Ministry of Post, Telephone and Telegraph (MPTT) has carried out many projects to expand the scope of services in the Kingdom, especially in the large urban centres. Because Asir

Table: 5.9

No. of outgoing from and incoming mails to Asir, 1970-83, (1,000).

Year	Official & Register	%	Ordinary	%	Publicat. & Print.	%	Total	% Increase
Outgoing Mails								
1970	747	45	842	50	81	5	1,670	-
1975	1,108	40	1,576	57	90	3	2,774	66
1980	1,785	30	4,021	67	220	4	6,026	261
1983	1,630	18	7,027	77	453	5	9,110	446
Incoming Mails								
1970	750	45	747	45	180	11	1,677	-
1975	929	33	1,714	61	168	6	2,811	68
1980	2,167	24	6,172	67	899	10	9,238	451
1983	1,818	16	9,705	77	1,042	8	12,565	649

Source: General Directorate of Post, Statistical Book, 1984.

lacks such centres the region still lags far behind other regions in this field.

The first telephone service in Abha appeared in 1953 and was based on a manual exchange which only had a capacity of 50 lines. This had only grown to 300 lines by 1975. In 1976 automatic telephone systems were installed in Abha and Khamis Mushayt with a capacity of 800 lines each, but most of these telephones were for government agencies, commercial banks and the few leading persons in the communities. New automatic telephone systems with larger capacity were installed in Abha, Khamis Mushayt and Bishah in 1979. The new Abha exchange had a capacity of 8,000 lines, that at Khamis Mushayt 3,500 lines, with 1,000 lines at the Bishah exchange. Also in 1979 these Asir exchanges were linked by micro-wave to the rest of the country and the international telephone network. A telephone service was started in the towns of Alnimas with a capacity of 2,024 lines and in Dhahran Aljanub with a capacity of 1,024 lines in 1983. In 1984 a service began in Tanumah, Bareq, Bellasmar, Sabt Alalayah and Hajla.

As shown in Table 5.10, the total working lines in Asir in 1980 were only 9,728. These had increased to 24,337 lines in 1985, but this only gives a ratio of one line to every 50 persons and shows the low level of access to telephones in the region compared with other regions. For example Al Qassim region had 42,368 working lines in 1985 or 74 percent more than Asir's working lines, although its population is less than half Asir's population. The village pattern of settlement has slowed the expansion of the network and much emphasis is now placed on micro-wave links in the main settlement zone to speed up the spread of the network.

Long distance telecommunication facilities have seen some improvements in recent years although telegraph is

still the only mean of long distance telecommunication in most of Asir. In 1985 there were 22 telegraph stations in the region most of these being located in the main mountain settlement zone as shown in Fig. 5.6. The considerable demand for this service can be observed in the 465,000 telegrams sent and received in Asir in 1983. Telex services serve the towns of Abha, Khamis Mushayt and Bishah, but these still only have limited capacity.

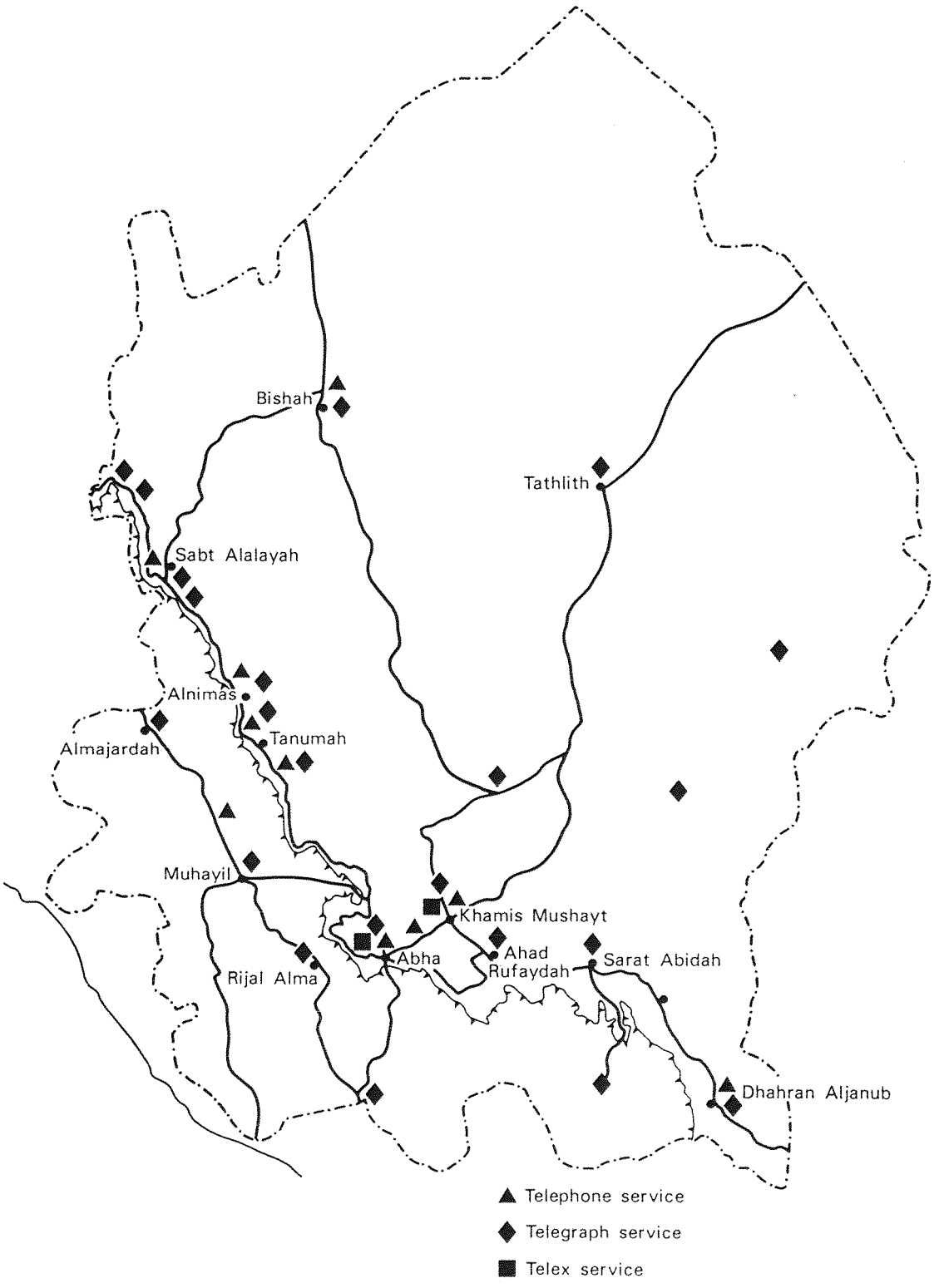
Table: 5.10

Telephone services in Asir, 1980-1985.

Centre with Tel. Service	Exchange Capacity		Working Lines	
	1980	1985	1980	1985
Abha	8,192	12,032	6,078	10,467
Khamis Mushayt	13,068	13,568	3,160	10,029
Bishah	1,792	1,792	490	1,552
Alnimas	-	2,048	-	1,125
Dhahran Aljanub	-	1,024	-	714
Tanumah	-	1,024	-	200
Bareq	-	1,024	-	33
Bellasmar	-	1,024	-	86
Sabt Alalayah	-	-	-	50
Hajla	-	-	-	81
Total	23,052	33,536	9,728	24,337
% Increase	-	45.5	-	150.2

Source: Ministry of PTT, Statistical Book, 8th issue, 1985

This chapter has reviewed the economic structure and the development of transport and communication infrastracture in Asir. It showed how remote and little developed this region was until very recent years. Farming remains the basis of Asir's economy with more than 72 percent of the total labour force employed in it. Other economic activities are still in the early stage of development although they are growing. The development of the physical infrastructure, like roads,



Source: compiled by the author

Figure 5.6 Telecommunication services in Asir Region, 1985

postal services and telecommunications are far less advanced. The need for more improvements in the development of Asir's infrastructure is now seen as a key feature for future development and as basic to the development of the region's economy and other services. The next two chapters will examine the provision of the basic services of education, health and municipal services in Asir where substantial progress has been made in the last fifteen years to spread these services compared with some other infrastructural facilities.

CHAPTER SIX

EVALUATION OF PUBLIC SERVICE PROVISION IN ASIR, I

6 EDUCATION SERVICES

6.1 THE SCALE OF THE PROBLEM

The last chapter outlined the high levels of illiteracy and low level of schooling of the Asirian population in 1974, at the time of the last census. Table 6.1 elaborates on this. It shows that in 1974 not only was nearly 80 percent of the population over ten years old illiterate, but less than a half of the remainder of the population, the literate part of the population, had enjoyed a minimum of a full elementary education, so that many were not properly literate or properly schooled. Education was still not the norm for most children in Asir. Even amongst the urban population only 27 percent of the males had had a complete elementary education and this figure fell to 11 percent in the rural areas and to less than 1 percent amongst the nomads. The proportions of females who had had a full elementary education was even lower. As a result literacy levels were low especially amongst the rural and nomadic population and the females even though some who had had less than a full six years of elementary schooling claimed to be literate.

The lower levels of illiteracy amongst urban males in Asir in 1974 reflected the earlier development of schools, particularly at the elementary level, in some towns, but the high level of illiteracy amongst the females both in the towns and rural areas resulted from the slower development of basic schooling for girls. Similarly schooling levels amongst the nomadic population were extremely low.

The proportion of Asir's population who had a post-elementary education was very low even in the urban areas in 1974. In 1974 there were 287 primary schools for boys and 105 primary schools for girls and most of these were in the towns and larger villages. But most of these were very recently established so that only about 4 percent of the population had had elementary education. 1.3 percent had intermediate and less than 1 percent had secondary schooling

The 1974 Census gave some indication of the rate of school attendance by children then aged six to nine years old, because the census was taken just at the start of the period of rapid educational expansion. Table 6.2 shows that of the 89,087 children aged six to nine years in Asir in 1974 only 22,157 (25 percent) were enrolled at school. But this one quarter of the children receiving schooling was unequally distributed across the three sectors of the population. The majority of the boys in urban areas were in school and also about half of the girls. In the rural areas only about 44 percent of the boys then attended schools, but only 9 percent of the girls. In the case of the nomadic children only 4 percent of the boys attended schools and almost none of the girls.

Large variations were also found in school attendance from district to district across Asir in the 1974 census. The main mountain areas had the largest proportion of their children in school. For example, Abha district had about 68 percent of its boys aged six to nine and about 41 percent of girls of the same ages in school. On the other hand, Tathlith area in the eastern part of the region had only 7 percent of its boys and none of its girls in schools. The Muhayil area in the Tihama had only 27 percent of its boys and 8 percent of its girls in schools. Other areas like Alfarashah and Alfatyhah in the Tihama also had virtually

Table: 6.1

Population ten years and over by educational status in Asir, 1974. (percentage)

Educational Status	Urban		Rural		Nomad		Total		Total both sexes
	M	F	M	F	M	F	M	F	
Illiterate	38.5	75.9	61.1	96.7	92.1	99.5	64.6	94.5	79.9
Can read only	4.9	1.7	6.1	0.5	1.8	0.1	4.7	0.6	2.6
Literate (with less than full primary education)	28.2	12.2	21.6	1.8	5.3	0.1	18.6	2.8	10.5
Education Completed at									
Elementary level	14.7	5.1	7.1	0.4	0.5	-	6.9	0.9	3.9
Intermediate level	5.2	2.1	2.2	0.1	0.1	-	2.3	0.4	1.3
Secondary level	3.7	1.4	0.9	0.1	-	-	1.3	0.3	0.8
Diploma	1.0	0.5	0.3	-	-	-	0.4	0.1	0.2
University degree	2.8	0.5	0.4	-	-	-	0.8	0.1	0.4
Not stated	1.0	0.6	0.3	0.4	0.2	0.3	0.4	0.3	0.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table: 6.2

School attendance by children aged six to nine years old in Asir, 1974

Sector of population	Boys		Girls		Total in School	
	Number	%	Number	%	Number	%
Urban	4,701	63.3	3,360	48.5	8,061	57.1
Rural	11,250	43.9	2,282	9.2	13,532	26.8
Nomad	513	4.2	51	0.4	564	2.3
TOTAL	16,464	36.6	5,693	12.9	22,157	24.9

Source: The 1974 Census.

none of its children at school at the time of the 1974 Census.

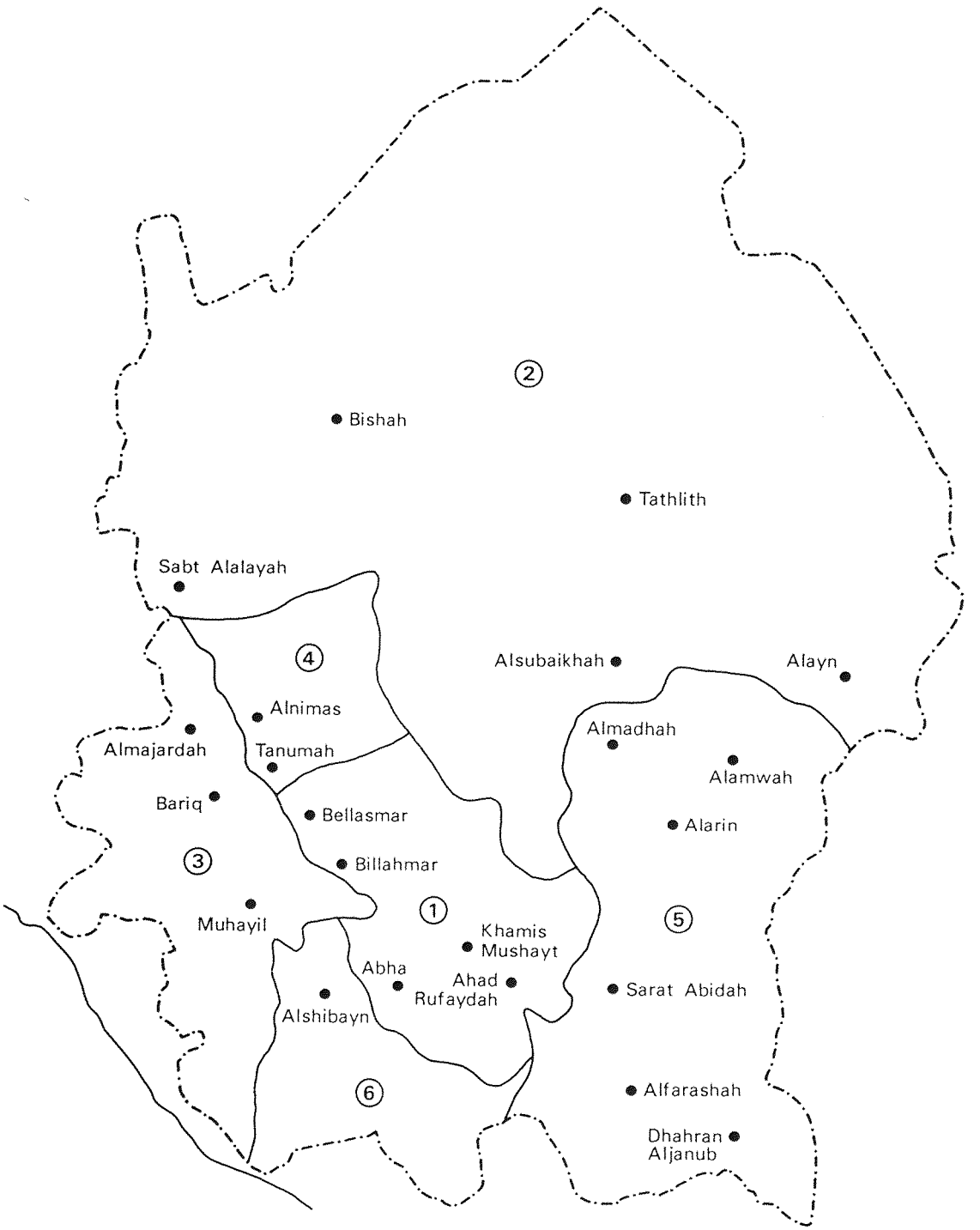
No comparable census data for the 1980s is available to allow an examination of illiteracy and schooling trends, but it is clear that illiteracy levels in Asir were much lower by the mid 1980s, particularly amongst the young male population who had benefitted from the rapid expansion of the elementary school system. The 281 elementary schools for boys in 1974 had increased to 692 by 1984. The number of elementary schools for girls had increased from 105 to 408 over the same period. The remainder of this chapter examines the growth of the school system to assess what progress has been made at different levels in different areas.

6.2 SCHOOL DEVELOPMENT

The Ministry of Education (for boys) divides Asir region into six educational districts. They are Abha, Bishah, Muhayil, Alnimas, Sarat Abidah and Rijal Alma (Fig.61), which are all administered from the ministry in Riyadh. The General Presidency For Girls' Education divides Asir into two educational districts, which are further subdivided into supervision areas. The Abha educational district for girls' education looks after fourteen supervision offices, while the Bishah district has two supervision offices (Fig. 6.2). There are in fact few common boundaries or areas for these different authorities for boys' and girls' education so that comparison of school provision for boys and girls in the different parts of Asir cannot easily be made.

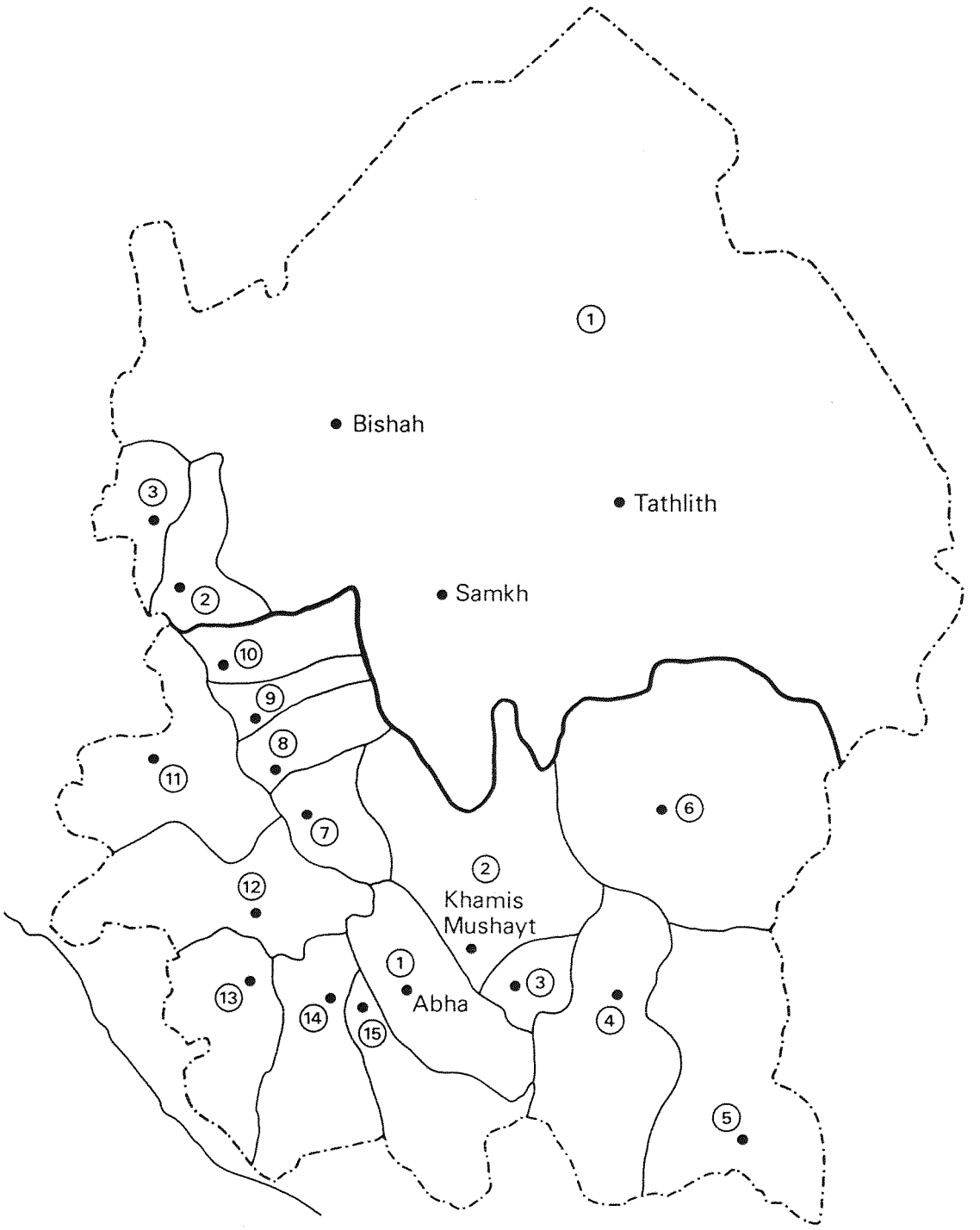
6.2.1 BOYS' SCHOOLS

The birth of a modern system of schooling in Asir region



Source: compiled by the author

Figure 6.1 Boys Educational Districts in Asir Region, 1986



Bishah Educational District

1. Bishah
2. Sabt Alalayah
3. Albashair

Abha Educational District

1. Abha
2. Khamis Mushayt
3. Ahad Rufaydah
4. Sarat Abidah
5. Dhahran Aljanub
6. Alarin
7. Bellasmar
8. Tanumah
9. Alnimas
10. Bani Amru
11. Almajardah
12. Muhayil
13. Qana
14. Rijal Alma
15. Haswah

Source: compiled by the author

Figure 6.2 Girls Educational Districts and Supervision Offices in Asir, 1985

did not occur until 1935 when the first government elementary school for boys was established in Abha town. Until then and since the affiliation of Asir into Saudi Arabia in 1922, the government had focussed its activity on uniting the Kingdom and imposing security. Schools set up earlier in Abha by the former local rulers and the Turks were closed by the Saudis when they came to power (Al-Zaidi 1984). For more than a decade between 1922 and 1934 the only schools in the region were "Katatib" which were run by religious persons who gave lessons in the mosque on how to read the Holy Quran. One year after the first government school in Asir was set up in Abha another was established in Bishah town. By 1940 there were only five boys' elementary schools scattered over the region, one each in the towns of Abha, Bishah, Khamis Mushayt, Alnimas and Muhayil.

Table 6.3 shows the growth in elementary schools in Asir region in each educational district. It can be seen that the early rate of growth in the boys' elementary school system - the first part of the educational services to be established - was slow. 25 years after the first government school in Asir was set up in Abha only 45 had opened in the whole province. After the first five were set up in the 1930s no school had been established during the Second World War years, because of the limited capabilities of the Kingdom's economy at that time.

During the period of 1945-1949 ten schools were opened in the region. Half of them were in the Abha district, one each in the towns of Abha, Khamis Mushayt and Ahad Rufaydah and two in large villages near to Abha. Three schools were set up in Bishah district, one in Bishah town itself and two in the Sabt Alalayah area. At this time the first two schools were opened in the Sarat Abidah district, the subject of the later part of this study. Thus by 1950

fifteen schools had been opened at a rate of one school per year since the first school had been opened in 1935.

In the period of the 1950s another 30 schools for boys opened in Asir at a time when government income from oil revenues increased dramatically. In the first half of the 1950s only eight elementary schools were established in Asir, two of them in the district of Abha, two in Bishah and one each in the areas of Muhayil, Alnimas, Sarat Abidah and Rijal Alma. In the second half of the 1950s and after the establishment of the Ministry of Education, another 22 primary schools for boys were created. More than half of them were located in Abha district, seven of them in or close to Abha town. Bishah district got three more elementary schools including the first one in Tathlith. Two schools were established in Alnimas area, and one each in the districts of Muhayil, Sarat Abidah and Rijal Alma. With 45 boys' primary schools in the region by 1959 less than two schools on average had been opened each year since the system was set up. Over half of these schools were in Abha district, leaving most children in the province far from a school.

During the 1960s, the provision of basic schooling witnessed a vast expansion due to the steady increase of government revenue from oil after the financial crisis of 1956-57. 67 primary schools for boys were established in the region during the first half of this decade and another 53 in the second half of the decade. The pattern of new schools remained concentrated. A third of the schools set up between 1950-54 were located in Abha district, and most of the rest in Bishah, Alnimas and Sarat Abidah areas. Only six were set up in the Muhayil district in the Tihama and only two in the Rijal Alma area also in the Tihama. But overall the early 1960s saw a growth rate of 13.4 new schools per annum much

Table: 6.3

Development of boys' elementary schools in Asir, 1935-1986.

Establishment Year	Educational District						Total	Cum. Total
	Abha	Bishah	Muhayil	Alnimas	Sarat A.	Rijal A.		
1935-39	2	1	1	1	-	-	5	5
1940-44	-	-	-	-	-	-	-	5
1945-49	5	3	-	-	2	-	10	15
1950-54	2	2	1	1	1	1	8	23
1955-59	14	3	1	2	1	1	22	45
1960-64	22	10	6	12	15	2	67	112
1965-69	15	16	4	7	9	2	53	156
1970-74	26	23	23	11	14	20	116	281
1975-79	50	53	76	35	40	28	282	563
1980-84	18	20	47	1	35	8	129	692
1985-86	-	2	-	1	5	2	10	702
TOTAL	154	133	158	71	122	64	702	702

Source: Compiled from data published by the Ministry of Education. Educational Development Data Centre, 1986.

higher than in the previous decade. During the second half of the 1960s another 53 schools were created in Asir. Nearly 60 percent of them were established in the district of Abha and Bishah. Again the Tihama lagged behind with the districts of Muhayil and Rijal Alma getting only 11 percent of the total.

By the end of the 1960s the total number of elementary schools for boys in Asir had risen to 165. This represented about 12 percent of the Kingdom's elementary schools. Nearly three-quarters of them had been established within the previous ten years and most were in the main mountain village zone. Abha district had 36 percent of them. Bishah had 21 percent, 14 percent were in Alnimas, and 17 percent in Sarat Abidah. But only 12 percent were in the two Tihama districts.

With the launching of the First five-year development plan in the Kingdom in 1970, the education sector in Asir region expanded at an even more impressive rate. A total of 116 new primary schools for boys were established during the first five year plan period. This was equal to about 17 percent of the total number of boys' elementary schools created in the country in this plan period. Now more emphasis was placed on providing schools in areas previously neglected, such as the Tihama and in the smaller mountain villages. Whereas Muhayil district had only thirteen primary schools until 1969, during the period of 1970-74 a total of 22 schools were established in this area alone. A similar situation was found in Rijal Alma district in the Tihama. It had only six schools in 1969, but during the first half of the 1970s, 20 new primary schools were set up, eliminating some of the earlier shortfall.

Overall the years 1970-74 saw the total number of primary schools for boys in Asir increased by 70 percent to

281. Although 31 percent of these new schools were located in Abha district, many others were located in more remote areas. Also in this period the number of classes increased by 86 percent from 962 classes in 1970 to 1788 in 1974, as several of the older schools were enlarged.

During the second half of the 1970s the rapid expansion of the elementary school system for boys in Asir continued at an even faster rate. A total of 282 boys' schools were opened between 1975 and 1979. This equalled 17 percent of the total boys' primary school established in the country at this time. This was the peak period of school development in Asir and gave a growth rate of 56.4 new schools per year compared with 23.2 schools per annum in the previous five years and 12 per year in the 1960s.* These additional schools were distributed all over the region aiming to bring elementary schooling for boys into virtually every village cluster in keeping with the Second national plan (1975-80) to provide primary schooling as widely as possible for both boys and girls. The 398 elementary schools established in Asir region in the 1970s were more than double the number of schools which had been created over the previous 35 years.

The first half of the 1980s also saw rapid development in providing elementary schools for boys in the region, but the number of schools established during this five year period was less than half of the number provided in the previous five year period. This was partly because of the large number of schools established in the 1970s in the

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* This peak period of school development was the direct result of the Kingdom's major investment programmes in education provision after the rapid increase of the government revenues from oil. These increased from 1,214.0 million dollars in 1970 to 48,435.1 in 1979 (Young, 1983). This expansion in number of schools was paralleled by a 239 percent increase in the number of classes, a 232 percent in the number of teachers and a 141 percent increase in the number of pupils.

villages most able to support schools and partly because of the fall of the government funds for education and other purposes as a result of the decline in world oil prices. Oil income fell by 62 percent between 1980 and 1984 and this greatly slowed national development.

The majority (64 percent) of the 129 new primary schools for boys created in Asir in this period were located in the districts of Muhayil and Sarat Abidah. These are two areas with large nomadic communities which have continued to suffer from higher illiteracy rates than in the main village areas as well as poor access to educational services. The Tihama area of Sarat Abidah district only opened its first primary school for boys in 1976, and clearly lagged behind the more settled parts of the district.

Under the current five year plan fewer new schools can be expected to open now that a more complete system exists. In 1985 and 1986 only ten elementary schools for boys were established in Asir. Two of these are Quranic schools at Tanumah in Alnimas district and at Alsubaikhah in Bishah district. These are really branch extensions of primary schools already established in these two places. The other eight schools were all established in nomadic communities, four in the Tihama and the other four in the Tathlith area.

As the rate of expansion of primary school provision has dropped in recent years because a mature stage of provision has been achieved in most parts of the region, more emphasis is now placed on improving the post-elementary sector of education. With a total of 702 primary schools for boys by the end of 1986, they represent about 74 percent of the total number of boys' schools in Asir. Clearly this section of the education system for boys is quite well developed and it has now become necessary to give more attention to the development of provision for boys at the intermediate and

secondary levels.

Table 6.4 shows the development of intermediate and secondary schools for boys in Asir since 1949 when the first intermediate school was established in Abha town. It can be seen that the early development of these levels was very slow because there were too few boys with the required elementary education to benefit from them. Also they were slow to develop because of the larger investment they require compared with the primary school. Intermediate schools need to be larger than primary schools to provide a range of subjects and need to command rather larger catchments. This also means they employ more staff and teachers. Decisions on when and where to provide intermediate schools were difficult particularly in the early years of limited resources and limited number of students qualified to go to them.

The first boys' intermediate school established in the region, was set up in 1949 in Abha town, some fourteen years after the establishment of the first elementary school in the town. Hence many boys in Abha were until then only able to get an elementary schooling because there was no school they could go on to. Only after the creation of twelve boys' primary schools in Asir and several in Abha did the region get its first intermediate school. Yet three years later the first secondary school in the region was opened in Abha to accommodate many of the first pupils to gain an intermediate level schooling. Then for ten years from 1953 to 1964 no new intermediate or secondary schools were established in the region although nearly 100 elementary schools were set up through this period, again because it was felt that the expansion of the elementary system should take priority. This is in contrast to what happened elsewhere in the Kingdom at this time. For example between 1960 and 1964, 97

Table: 6.4

Development of boys' intermediate and secondary schools in Asir, 1949-1986.

Establishment Year	Educational Districts												Total	Cum. Total
	Abha		Bishah		Muhayil		Alnimas		Sarat Abida		Rijal Alma			
	I	S	I	S	I	S	I	S	I	S	I	S		
Started 1949	1	-	-	-	-	-	-	-	-	-	-	-	1	1
1950-54	-	1	-	-	-	-	-	-	-	-	-	-	1	2
1955-59	-	-	-	-	-	-	-	-	-	-	-	-	-	2
1960-64	-	-	-	-	-	-	-	-	-	-	-	-	-	2
1965-69	6	1	3	1	1	-	4	-	2	-	1	-	19	21
1970-74	11	-	7	-	2	-	2	2	4	1	-	-	29	50
1975-79	19	3	21	2	8	2	6	2	9	1	6	2	81	131
1980-84	12	14	21	11	13	4	6	2	9	6	5	2	105	236
1985-86	2	4	1	1	1	1	-	-	-	1	1	-	12	248
TOTAL	51	23	53	15	25	7	18	6	24	9	13	4	248	248

Abbreviation: I: intermediate school
S: secondary school

Source: Compiled from data published by the Ministry of Education, Educational Development Data Centre, 1986.

intermediate schools were established elsewhere in the country.

The second half of the 1960s saw more rapid development of the intermediate and to a lesser extent, secondary levels of education services for boys in Asir. Seventeen intermediate and two secondary schools were opened in this period although these were only 8 percent of the total schools of these levels created in the Kingdom during this period. The Abha area got the largest share of these new schools with six schools located there, one each in the towns of Abha, Khamis Mushayt, Ahad Rufaydah and one each in the chief villages of the areas of Bellasmar, Tindihah and Rbayah Werfyidah. By the end of the 1960s Abha district had one third of all the intermediate and secondary schools in Asir. Three intermediate schools were also set up for the first time in Bishah district, one in Bishah town itself and two in the area of Sabt Alayah. The other eight intermediate schools were opened in the districts of Alnimas (four), Sarat Abidah (two), and one each in Muhayil and Rijal Alma. The only two secondary schools established in this period were set up in 1969 in the towns of Khamis Mushayt and Bishah so that by the end of the 1960s the three main towns of Asir each had a secondary school.

The 1970s saw much more rapid expansion of these two sectors of the schooling system in Asir especially in the provision of intermediate schools to reduce some of the earlier shortfall. Of 199 boys' intermediate schools established in the Kingdom during the first half of the 1970s, 26 (13 percent) were allocated to Asir region. Eighteen of them (69 percent) were established in large villages in the districts of Abha and Bishah which already had elementary schools for a number of years. Two intermediate schools were also opened in the Muhayil area,

two in Alnimas and four in Sarat Abidah district. The number of intermediate schools in the region grew by 53 percent during these five years, and the number of students in these schools increased by no less than 176 percent. The number of classes and teachers grew similarly by 171 percent and 189 percent. All of this rapid growth was a reflection of the large number of students who had already by 1970 obtained elementary education, and a recognition by many of them that more education would give them a better future.

By 1975 there were 44 intermediate schools in Asir where 5,183 students were taught in 203 classes by 358 teachers. Average school size was small at 118 students each. These schools represented about 8 percent of the total number of intermediate schools in the whole country, but only 5 percent of students and 6 percent of intermediate level teachers because of their small size.

Just as the introduction of the intermediate system had lagged behind the elementary, so the secondary system only experienced rapid growth after sufficient boys with the necessary education become available for this level of schooling. The town of Alnimas got its first secondary school in 1972 and another was opened in a large village nearby. Sarat Abidah district got its first secondary school in 1973 and it was located in the town of Sarat Abidah. Whereas Asir had 8 percent of the Kingdom's intermediate schools by the end of 1974, it still only had six secondary schools, equal to only about 4 percent of the Kingdom's secondary schools at that time. These schools contained only 654 students enrolled in 26 classes with 53 teachers.

As more primary school leavers from the expanded elementary system became available for intermediate and secondary schooling, it was almost inevitable that the shift of emphasis from further elementary provision in the more

remote areas to post-elementary provision in the more settled areas should occur.

The period 1975-1984 saw further rapid expansion in these levels of education. 186 intermediate and secondary schools opened in Asir in that ten year period. No less than 69 intermediate schools were opened in Asir between 1975-79. The main centres got most of these schools but several were developed in less populated areas. Nineteen of them were located in Abha district, 21 in Bishah, eight in Muhayil, six in Alnimas, nine in Sarat Abidah and six in Rijal Alma. This gave a growth rate of 13.8 intermediate schools per annum compared with only 5.2 schools per year in the previous period. Also twelve secondary schools were established in the region in this five year period, double the number of secondary schools created over the previous 22 years. Four of them were opened for the first time in the Tihama area in the districts of Muhayil and Rijal Alma. This rapid development in the system transformed educational opportunities in Asir. Whereas there were only three secondary schools in Asir in 1970, there were eighteen by 1979 and the number of secondary level students grew from only 252 in 1970 to about 3,200 in 1979. But in many parts of Asir most boys were still unable to get a secondary schooling.

The early 1980s saw a new peak level of provision of intermediate and secondary schools to bring them into virtually every cluster of villages with reasonable catchments. Between 1980 and 1984, 105 higher level schools were established in Asir of which 66 were intermediate level and 39 were secondary level. In fact the 39 secondary schools opened in these five years were more than double the number of these schools created over the previous 27 years.

In 1985-86 twelve more higher level schools were created

in the region the majority of them secondary schools and mainly in the Abha area.* In fact the number of these post-elementary schools established during these two years were more than the number of elementary schools opened in the same period.

By the end of 1986 the total number of intermediate schools for boys had risen to 184. These made up 19.4 percent of the total number of boys' schools in the region. Secondary schools accounted for 6.7 percent. It should be noted that further growth in the post-elementary level can be expected as some areas still lack provision. Abha district, for example, possesses 28 percent of the region's intermediate schools compared with 22 percent of elementary schools. The Muhayil area has only 14 percent of the region's intermediate schools, but has about 23 percent of all elementary schools, indicating the shortfall in higher level school provision in this area.

Most recently teacher training has been grafted onto some of the secondary schools to supply the necessary need for teachers in this expanded school system. But no data is available on the early development of this type of education. These type of institutes are mainly located in the main urban areas of the region and usually share a building with the secondary school, with the same headmaster and academic staff.

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* Some were Quranic intermediate schools set up in the towns of Abha and Khamis Mushayt, and in the villages of Hijla and Alalhim. One secondary school opened in Abha town was of a new, larger type started in the Kingdom in the early 1980s to provide a wider range of subjects. It started with 145 students in 14 classes with 38 teachers.

6.2.2 GIRLS' SCHOOLS

Having reviewed the development of boys' school in the Asir region since the early foundation of the system in the 1930s, it is now necessary to give some consideration to the girls' schools which are administered as an entirely separate system by the General Presidency For Girls' Education. This was established in 1960, seven years after the establishment of the Ministry of Education which only administers the boys' schools. No system of girls' education existed in the country before 1960 although there were some private schools and a number of traditional "Katatib" schools which taught girls the Holy Quran and the Islamic heritage.

The General Presidency For Girls' Education was set up as a separate organization for girls' education in keeping with the national policy on strict division of the education system for boys and girls. This separateness creates problems particularly in a rural region like Asir where a school may have to be located for each sex in a settlement where the catchment of children is only sufficient to support one school. This has affected the development of girls' schooling especially which was retarded until a large part of the boys' education system had been established. Hence educational levels for girls generally lag well behind those of boys although progress since 1970 has been impressive.

This relative lack of educational opportunities, at least in the earlier years, for girls is reflected in a marked shortage of data on the development of girls' schools in Asir region. The scanty data which can be obtained is complicated by the administrative arrangements under which education provision for girls has been made in the region.

Until 1978 the Southwest region of the Kingdom, including the provinces of Asir, Jizan and Najran, was under one authority for girls' education with headquarters located at Abha. In 1978 this region was divided into four educational districts, two to cover Asir, one each for Jizan and Najran. Because the original administrative office for the whole Southwest no longer exists, little information is now available, about the number and location of girls' schools in Asir region in the early years of the development of the system. Nevertheless Table 6.5 outlines the development of girls' schools in Asir region mainly since 1970, based on data collected from the Directorate of Girls' Education in Abha and from the General Presidency For Girls' Education in Riyadh.

The first primary school for girls in Asir was established in 1961 at Abha town. This was 26 years after the establishment of the first boys' school in the region and only after 54 boys' schools had been set up in Asir. By 1970 there were 21 elementary schools for girls in the region compared with 165 for boys. These represented only 5 percent of the total elementary schools for girls in the whole Kingdom at that time. Thus by 1970 there were only 6,188 girls students in 211 classes and with 259 teachers in the region's 21 elementary schools. These pupils represented about 7 percent of the region's female population of the elementary age group. No detailed information could be obtained about the location of most of these girls' schools but they would be found in the main towns and large villages. There were no intermediate or secondary schools for girls in Asir in 1970, but two teacher training institutes had been opened in Abha and Bishah in 1967 accepting girls who had completed their elementary education. These two institutes prepared girls with an

Table: 6.5

Development of girls' schools in Asir, 1970-1985.

Establishment Year	Primary school	Intermed. school	Secondary school	Teacher training	Total	Cum. Total
Up To 1970	21	-	-	2	23	23
1970 - 74	84	7	-	2	93	116
1975 - 79	113	17	4	3	137	253
1980 - 85	228	40	8	8	284	537

Source: Directorate of Girls' Education in Asir, and the General Presidency For Girls' Education, Third Statistical Book, 1985.

elementary education to teach in primary schools.

During the first half of the 1970s significant growth occurred in the provision of girls' schools to begin to eradicate the deficiency in this sector of education. 84 primary schools for girls were established at an average rate of nearly seventeen schools being opened each year. This compared with only two per year in the previous decade. But whereas the number of schools for girls rose four fold in the early 1970s, the number of students only increased from 6,188 in 1970 to 15,948 in 1974, an increase of about 158 percent. The number of teacher also increased by 196 percent. This was because of the small size of many of the new schools.

In this period seven intermediate schools for girls were also established. These were located in the main towns of the region at Abha, Khamis Mushayt, Bishah, Alnimas, Sarat Abidah and Dhahran Aljanub. These were where the older elementary schools had created a pool of girls students able to benefit from post-elementary schooling. Even so by the end of 1974 only 1,300 intermediate students were enrolled in 38 classes with 72 teachers. Two new teacher training institutes were established at Khamis Mushayt and Bishah in 1974.

In the second half of the 1970s, girls' education witnessed further rapid expansion. A total of 137 schools were established in Asir by 1979. 83 percent of them were elementary schools and this doubled the number that had existed five years before. The number of students in them also grew by 87 percent and teachers by 96 percent. They were distributed across the region in well-populated settlements. Seventeen intermediate schools were opened in the region in this five year period at more than double the rate of opening of the previous five years. Secondary

education for girls was introduced for the first time in the region with four schools set up in the main centres of the region. Three more teacher training institutes were also opened in this period.

By the end of the 1970s, therefore, the total number of schools for girls had increased from 21 in 1970 to 253, a notable achievement within ten years. Even so this was little more than one third the number of schools for boys operating at that time. As is to be expected the great majority (86 percent) were primary schools which had enrolled 23,000 girl students in 1,184 classes and with 1,551 teachers. The intermediate and secondary sectors remained small as recently as 1979. In that year the intermediate schools accommodated 3,132 students enrolled in 119 classes with 268 teachers. The post-intermediate schools had risen to eleven by 1979 but only four of these were secondary schools and seven were teacher training institutes. The post-intermediate system only had 1,097 students in 45 classes with 135 teachers.

During the period 1980-85, further significant progress was made in girls' education. 228 new primary schools were established to create a system which now reached most of the villages particularly in the mountain area. In fact the number of primary schools for girls established in this period, at an average of 38 per year, was nearly double the number of boys' primary schools established in the same period as the girls' system began to catch up with the boys'. What is more, the enrollment in girls' schools increased faster than the growth in the number of schools. While the number of girls' elementary schools increased by 105 percent between 1980 and 1985, the same as the increase in teachers, the number of students increased by about 136 percent and classes by 147 percent. Hence average school

size was now increasing.

40 new intermediate schools for girls were also opened in this period to increase this type of school from only 24 at the beginning of 1980 to 64 at the end of 1985, an increase of 167 percent. Here, however, average school size fell. This is normal when large numbers of new schools open with few pupils in their early years. Whereas the number of schools increased by 167 percent, the number of students increased by 133 percent, classes by 132 percent and teachers by 106 percent.

Eight secondary schools for girls were established to complement the four that already existed. These were set up in the main populated centres in the mountain areas, but most girls still lack secondary educational opportunities. The late development of secondary schools for girls in Asir, with the first school opened 23 years after the first boys' secondary school, is the result of two main factors. As with the development of the boys' schools system in the earlier years, the first priority for girls' school development has been in the area of elementary education although it was early recognized that a rapid expansion of the girls' system would need teacher training facilities. Hence teacher institutes were set up early to train teachers to teach only to the elementary level. But this caused difficulties in getting qualified female teachers to cover the range of subjects offered in the intermediate and secondary schools which has severely slowed their development.

Overall, therefore, by the end of 1985 the total number of girls' schools in Asir had increased to 537 but 83 percent (446 schools) were for primary education. Only 12 percent (64 schools) were for intermediate level and 5 percent (27 schools) for secondary and teacher training education. At a comparable point in time, about 1979, there

were 131 intermediate and secondary schools for boys when there were 563 elementary schools. That is, the post-elementary system for boys then made up about one fifth of the school system whereas for girls it made up only a sixth. This indicates a lesser emphasis to promote girls' education beyond the elementary level.

6.3 DISCREPANCIES IN SCHOOL PROVISION

Comparing the number of boys' and girls' schools in the Asir region, it is obvious that there are still marked discrepancies in the provision of schools between them, but that in recent years these had been narrowed. Of the 1,148 elementary schools in the region 61 percent of them are for boys and only 39 percent for girls, but in earlier years this gap was even wider. The discrepancy between the provision of boys' and girls' schools is much higher at the post-elementary level. Of the 248 intermediate schools in the region, 74 percent of them are for boys and only 26 percent for girls.

Similarly there are more than five times as many secondary schools for boys as for girls, so that whereas all large cluster of villages would provide secondary education for their boys, there are far fewer opportunities for girls in secondary education outside the main towns. The only type of girls' schools which outnumbers the boys' schools are the institutes of teacher training. But this discrepancy in the favour of girls results from the fact that the Ministry of Education has not promoted the opportunity of this type of education for boys because of the other opportunities for boys to go to junior colleges to become more qualified teachers in the elementary schools.

Although the ratio of primary pupils per teacher is

relatively small in Asir region by national standard, this is not indicative of a plentiful supply of teachers as much as the small catchment of many of the schools. There are difficulties in finding qualified teachers and many are non Saudi. Of the 5,822 teachers at boys' primary schools only 54 percent of them are of Saudi nationality and the remaining 46 percent being expatriates from the other Arab World countries. Alnimas and Abha districts have the highest proportion of Saudi teachers in boys' primary schools at 98 percent and 64 percent respectively, while the areas of Sarat Abidah (36 percent) and Rijal Alma (39 percent) have the lowest percentages.

The problem of teacher supply is much more acute for girls' education, where Arab women teachers cannot be so easily attracted from other countries to fill the gap. It is for this reason that some emphasis has been placed in Asir on training more girls to become teachers. Only 28 percent of primary women teachers are Saudis. More than half (56 percent) of the Saudi teachers in girls' elementary schools in Asir are concentrated in the areas of Abha and Khamis Mushayt particularly in the towns of these areas.

6.4 ELEMENTARY EDUCATION

The previous sections have established that the development of the school system has made considerable progress in Asir in the last fifteen years especially for boys, but increasingly in recent years for girls. It is now necessary to see how good this provision is in each part of the region, beginning with the elementary level. The elementary stage is the basis of the education system and the long-standing educational policy in the Kingdom is that elementary schools must accommodate all children reaching

the primary school age. This is, of course, conditional on the proximity of a school and clearly in Asir, until recently, many communities were too far from the nearest school.

The management of elementary schools as well as locational decisions for the establishment of new ones are the job of the local educational districts of the relevant ministries. Every year the Ministry of Education and the General Presidency For Girls' Education allocate the number of new schools that are to be established in each educational district and then each local educational office determines their location in particular settlements.

There is no clear criteria for deciding when and where a new school should be established. The educational policy issued by the Higher Committee for Educational Policy in 1970 gave only general guidelines for planning and establishing primary schools. Basically the educational district, in deciding to provide a new school, should seek "a central suitable location" and should consider "transporting students from neighboring villages thereto." Where a catchment for a school is very small districts are advised to "apply the single teacher system if need be" that is to run a school with only one teacher.

Generally the provision of a new elementary school is only considered after a community has applied to have a school of its own.* After a community has applied, a committee of the local educational authority visits and surveys the area in terms of the density of the area's population, the number of children of elementary school age,

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* Information for this section was obtained in broad ranging interviews with officials in the Educational Directorate of Abha and Sarat Abidah and in the Girls' Education Directorate in Abha, and in the local supervision offices for girls' education in Sarat Abidah and Dhahran Aljanub.

the distance to the nearest school, and the likely catchment of the new school. The conditions of the local roads are also considered. If it seems that the community possesses the threshold to supply at least twenty pupils to support the first class and the other principals are met then the next steps will be put into operation by the local educational authority. A report of the survey will be sent with a request to the Ministry of Education or the General Presidency For Girls' Education in Riyadh to allow the school to take its position in the queue for approval and funding. These requests are not, however, dealt with in strict order since some cases prove better founded than others. Some communities can advance their claim for funding by having more influence and providing land free for the school.

The best way to assess the level of school provision in the region would be to see what proportion of children are enrolled in schools, but no data is available on the number of children of the relevant ages in Asir and in the various districts to compare with student numbers. One must therefore look at the crude numbers of school places provided. At first sight, on a national comparison, Asir seems well provided with elementary schools. But this comparison is difficult to make because elementary schools in Asir are smaller than the national average. This results from the rural nature of its settlement pattern. If schools are to be provided reasonably close to where children live they have to be provided for small numbers of children. The 702 primary schools for boys in the region in 1986 constituted about 16 percent of the total number of elementary schools for boys in the Kingdom. But Asir only has about 10 percent of the Kingdom's male students in this level. The average size of elementary school for boys is

nationally more than 165 pupils, but it is only 99 in Asir region.

As would be expected in the urban areas of the region the schools are much larger than in the rural and nomadic areas. For instance, the 32 elementary schools for boys in the towns of Abha and Khamis Mushayt have an average size of more than 324 pupils per school whereas the average size of 36 elementary schools in the villages around Abha is less than 118 pupils per schools. Schools in other rural areas in the region are often smaller than this.*

A similar situation is also found within the girls' primary schools. In 1985 there were 446 elementary schools in Asir attended by 47,502 girls. This made up about 14 percent of the total number of primary schools for girls in the Kingdom, but Asir only contains about 9 percent of the total girls in elementary schools in the Kingdom. The average size of girls' schools is slightly higher (107) than the boys' schools in the region (99), but well below the national average size of 170 girls per school in 1985.

District variations in school provision can throw a little more light on the quality of the system. The distribution of boys' elementary schools and their enrollments by educational district in Asir region in 1986 are shown in Table 6.6. It can be seen that districts vary greatly in their number of schools. Muhayil and Abha have the largest number of schools, while Alnimas and Rijal Alma are less than half their size. However, when these figures are related to the population in the district and the

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* The number of pupils per classroom is also small in Asir's schools with an average of fifteen pupils per class, much smaller than the national average of 20, and the recommended national standard of 25 students per class. The number of students per teacher is also low with an average of 12:1 in Asir region compared with 18:1 for the whole of the country.

Table: 6.6

Distribution of boys' primary schools and enrollments by educational district in Asir, 1986.

Educational District	Male population 1986	No. of Schools	Ratio of school to population	Total Enrollment	Average school size	% of male populat. enrolled
Abha	151,012	154	1:981	26,344	171	17.4
Bishah	154,910	133	1:1165	14,919	112	9.6
Muhayil	98,129	158	1:622	11,610	73	11.8
Alnimas	49,955	71	1:704	4,363	61	8.7
Sarat Abidah	112,314	122	1:921	8,503	70	7.6
Rijal Alma	32,450	64	1:507	3,743	58	11.5
TOTAL	598,860	702	1:853	69,482	99	11.6

Note: Population figures based on 4.1 percent annual increase over 1983 base figure of Asir Emirate study.

Source: Ministry of Education, Educational Development Data Centre, 1986.

percentage of the population enrolled in the schools, one can see considerable regional variations. A crude ratio of population per school is not very useful as a guide to school provision because schools vary in size. Thus Bishah and Abha districts have a high ratio of population to schools but schools tend to be larger in those two districts.

There is no detailed data available to show the rate of enrollment at this level of education for the relevant age-group. But using the total district population in it place Table 6.6 shows that while there was 11.6 percent of the total estimated male populations in Asir in 1986 enrolled at elementary schools, there are marked variations in this figure between the educational districts within Asir. Abha district had the highest ratio of its population enrolled at elementary schools as is to be expected in an urban area. Sarat Abidah, Alnimas and Bishah districts had the lowest ratios of population enrolled at primary schools at about half the level for Abha. Their lower levels of enrollment result mainly from the relatively large nomadic populations in these districts amongst whom schools are largely lacking. Even amongst the farm village communities, scattered widely across a rugged terrain, many parents do not send their boys to school if the school is not close enough to them and even if school transport is made available. But these figures need to be treated with caution because Table 6.6 suggests that school enrollments are higher in the nomadic areas of Muhayil and Rijal Alma than in a more fully rural area like Alnimas. This seems unlikely and could result from the crudeness of the population data.

It has already been stated that the development of girls' primary schools in Asir has occurred more recently than for boys, yet good progress had been made in enrolling

a considerable proportion of primary age girls by 1985. The degree of that progress can now be examined across the region. Table 6.7 shows the distribution of girls' elementary schools and their enrollments by local supervision offices in the region in 1985. It can be seen that in 1985 there were 446 primary schools distributed throughout eighteen educational offices within the region. These districts varied widely in size. The largest office, Bishah, supervised 60 schools while others, like Alarin, only supervised small number of schools. The average number of population per girls' elementary school in Asir is about 1,359, compared to one boys' school to every 853 males. This indicates the much lower level of girls' school provision. Large variations are found in this ratio across the region. The least favourable ratios were recorded for the areas of Alarin, Bishah, Almajardah and Sarat Abidah, while the most favourable ratios are found in Rijal Alma, Tanumah and Bellasmar.

But little can be concluded from crude population:school ratios because, as Table 6.7 shows, school sizes vary so much. Table 6.7 also gives the area enrollments as ratios of area populations for the eighteen local offices. Again the major urban areas of Abha, Khamis Mushayt and Ahad Rufaydah (close to Khamis Mushayt) have the highest ratios of enrollment, while the more rural and nomadic areas of Alarin, Bishah, Sarat Abidah, Haswah and Almajardah have the lowest. It also seems that the better served areas have larger schools on average with larger average class size. For instance, Khamis Mushayt area has the highest proportion of its population enrolled at school. At the same time its schools are larger with an average size of 237 students per school, and with about 25 students per class and 20 pupils per teacher. On the other hand, Alarin area with the lowest

Table: 6.7

Distribution of girls' elementary schools and enrollment by local supervision office in Asir, 1985.

Supervision office	Female populat. 1985	No. of schools	Ratio of school to populat.	Total enrollment	Average school size	% of female population enrolled
Abha	64,205	58	1:1107	7,753	134	12.1
Khamis Mushayt	56,468	37	1:1526	8,776	237	15.5
Ahad Rufaydah	22,332	24	1:930	3,075	128	13.8
Sarat Abidah	39,515	24	1:1646	2,044	85	5.2
Dhahran Aljanub	30,379	20	1:1520	1,716	86	5.6
Alarin	43,581	10	1:4358	569	57	1.3
Bellasmar	17,856	21	1:850	1,673	80	9.4
Tanumah	8,852	12	1:738	993	83	11.2
Alnimas	23,413	24	1:975	2,246	94	9.6
Bani Amru	18,229	15	1:1215	1,177	78	6.5
Almajardah	49,560	29	1:1709	2,873	99	5.8
Muhayil	32,641	24	1:1360	2,490	104	7.6
Qana	17,075	15	1:1138	1,302	87	7.6
Rijal Alma	19,802	29	1:683	1,693	58	8.5
Haswah	13,536	11	1:1231	572	52	4.2
Bishah	105,345	60	1:1756	5,338	89	5.1
Sabt Alalayah	22,867	18	1:1270	1,785	99	7.8
Albashair	20,314	15	1:1354	1,427	95	7.0
TOTAL	605,988	446	1:1359	47,502	107	7.8

Note: Population figures based on 4.1 percent annual increase over 1983 base figures of Asir Emirate Study.
Source: The General Presidency For Girls, Education, Third Statistical Book, 1985.

rate of enrollment has smaller schools with an average size of only 57 pupils per school, 14 students per classroom and 11 pupils per teacher.

Lastly in this section it can be noted that the condition and quality of school buildings are often poor because of the priority to open schools as fast as possible. The majority of elementary schools in the region are located in buildings unsuited to the needs of education. 78 percent of the boys' primary schools were located in rented houses usually lacking most of the necessary facilities of playgrounds, sanitation, electricity supply and adequate space. Of the 157 schools (22 percent) in government buildings most are prefabricated and usually lack adequate maintenance. Only 205 (29 percent) of the schools for boys were supplied with electricity. A similar situation is also found in the girls' schools of which 73 percent were located in rented houses. Further points on the level of school provision, problems of school location and the quality of school facilities will be considered for the case study area later in the thesis.

6.5 INTERMEDIATE EDUCATION

The intermediate stage of schooling consists of three grades serving the twelve to fourteen year age-group. Students can only enter this level after completing the elementary schooling. There is no data on the enrollment rate of the twelve to fourteen year age-group in Asir, but government policy is to provide intermediate education for as large a number of the holders of the elementary certificate as possible.

More central control over the process of establishing intermediate schools is exercised by the Ministry of

Education or the General Presidency For Girls' Education than in the case of elementary schools. This is because the establishment of a school of this level is more expensive and requires a larger catchment area than an elementary school to be viable. There is in fact no common policy stated for locating intermediate schools but the general planning policy issued by the Higher Committee for Education Policy emphasizes that:

> "Intermediate schools are established in places where there are a large number of elementary school graduates and are located in a central suitable place making it possible for students from neighbouring locations to commute back and forth." (Educational Policy, 1970, Artical 126).

Hence a decision to establish a new intermediate school involves the analysis of the enrollment of neighbouring primary schools, the location and capacities of existing intermediate schools, and the quality of the accessibility to the proposed new school location.

As has already been pointed out the provision of this level of education has seen considerable expansion in Asir in the last decade particularly for boys. By 1986 there were 184 intermediate schools for boys with 18,826 enrolled students. That is about 6,000 boys per year were proceeding into intermediate schooling compared with about 10,000 per year entering elementary education. In contrast there were only 64 girls' intermediate schools with only 7,305 pupils in 1985. The distribution of boys' intermediate schools and enrollment by educational districts is shown in Table 6.8.

The region has about 14 percent of the total number of intermediate schools in the Kingdom but only 9 percent of the Kingdom's intermediate school population, largely because average school size is smaller in Asir.

The percentage of population enrolled at the boys' intermediate schools is 3.1 for the region as a whole

Table 6.8

Distribution of boys' intermediate schools and enrollments by educational district in Asir, 1986.

Educational District	Male population 1986	No. of schools	Ratio of school to populat.	Total enrollment	Average school size	% of male populat. enrolled
Abha	151,012	51	1:2961	8,212	161	5.4
Bishah	154,910	53	1:2923	3,334	63	2.2
Muhayil	98,219	25	1:3929	2,213	89	2.3
Alnimas	49,955	18	1:2775	2,120	118	4.2
Sarat Abidah	112,314	24	1:4680	2,181	91	1.9
Rijal Alma	32,450	13	1:2496	766	59	2.4
TOTAL	598,860	184	1:3255	18,826	102	3.1

Source: Ministry of Education, Educational Development, Data Centre, 1986.

compared with 11.6 percent in elementary education. It should be noted that this figure for intermediate education is much lower than for primary schools partly because the intermediate cycle is only three years long, half the length of the elementary cycle. But it also reflects the fact that many boys still do not proceed beyond an elementary education. Enrollments vary markedly across the region. Thus Abha district has the highest number of enrollments of 8,212, and also has the highest share of the population enrolled at this level of education. Significantly it has a larger average school size (161 pupils). A high proportion was also recorded for Alnimas district which also had a larger average school size (118 pupils). The other areas have a much smaller proportion of their population enrolled at intermediate schools and have a much smaller average school size. There are only an average 60 students per school in Bishah and Rijal Alma areas.

The small size of these schools in areas where only a small proportion of the population is enrolled is the result of the small number of elementary school leavers available to support the first grade of intermediate school in area of low population density. In fact most intermediate schools in the areas of Bishah, Muhayil, Sarat Abidah and Rijal Alma are simply classes attached to the elementary schools and share the same buildings, facilities and staff. Often the elementary schools have only been established for a few years. Accessibility and the limited availability of school transport are major problems particularly in such areas of village or nomadic settlement. Distance to the nearest intermediate school may prevent some boys attending. The educational authority provides transport for students living more than three and half km from school but only if there are more than five students in the village wishing to go to

the intermediate school.

The distribution of girls' intermediate schools and enrollments in Asir are shown in Table 6.9. This reveals a strikingly lower provision of this stage of education for girls than for boys. The 64 schools are mainly located in the main towns and villages of the region where elementary schools were established several years ago to provide sufficient qualified students in their catchments. The proportion of the female population attending intermediate schools is much lower than the males at only 1.2 percent, but again large variations are found between the local areas of Asir. Abha and Khamis Mushayt areas have the highest enrollment figures with 3 percent of the female population enrolled. Alnimas, Tanumah and Ahad Rufaydah areas also have higher percentages of their female population attending intermediate schools. Again these areas have larger schools reaching an average size of 281 pupils per school in Khamis Mushayt area. They also have rather larger average class sizes. But for the rest of the local areas the proportion of the female population involved in intermediate education is much lower, falling as low as only 0.1 percent for the areas of Alarin and Qana. In fact Haswah area in the hilly Tihama still has no intermediate schools for girls although it has eleven elementary schools with about 600 pupils.

There are several reasons for the low attendances of girls at intermediate schools in Asir. Firstly and most importantly is the limited number of girls who have the elementary school certificate, to allow them to go on to intermediate education, because of the very recent development of most primary schools. Over half of the girls' elementary schools in 1986 had not yet taught at the sixth grade so that many girls now in these schools are still too young for intermediate schooling, or they left before they

Table: 6.9

Distribution of girls' intermediate schools and enrollments by local supervision office in Asir, 1985.

Supervision offices	Female populat. 1985	No. of schools	Ratio of school to populat.	Total Enrollment	Average school size	% of female population enrolled
Abha	64,205	10	1:6421	1,915	192	3.0
Khamis Mushayt	56,468	6	1:9411	1,683	281	3.0
Ahad Rufaydah	22,332	4	1:5583	477	119	2.1
Sarat Abidah	39,515	3	1:13172	303	101	0.8
Dhahran Aljanub	30,397	3	1:10132	191	64	0.6
Alarin	43,581	2	1:21791	38	19	0.1
Bellasmar	17,856	2	1:8928	129	65	0.7
Tanumah	8,852	1	1:8852	180	180	2.0
Alnimas	23,413	3	1:7804	560	187	2.4
Bani Amru	18,229	2	1:9115	98	49	0.5
Almajardah	49,560	4	1:12390	109	27	0.2
Muhayil	32,641	2	1:16321	158	79	0.5
Qana	17,075	1	1:17075	9	9	0.1
Rijal Alma	19,802	4	1:4951	163	41	0.8
Haswah	13,536	-	-	-	-	-
Bishah	105,345	12	1:8779	868	72	0.8
Sabt Alalayah	22,867	2	1:11434	279	140	1.2
Albashair	20,314	3	1:6771	145	48	0.7
TOTAL	605,988	64	1:9469	7,305	114	1.2

Source: The General Presidency For Girls' Education, Third Statistical Book, 1985.

reached the sixth grade and therefore could not go onto intermediate schools. Secondly, the greater distances to reach intermediate schools make it more difficult for girls to commute.

With small levels of uptake of these school places nearly all girls' intermediate schools are only two or three classes attached to certain elementary girls' schools and share their staff and facilities. This is the same with many boys' intermediate schools. Only the seven girls' intermediate schools in the towns of Abha, Khamis Mushayt and Bishah are complete schools. Thus most of the rural intermediate schools have less than 40 girl students each. In contrast the urban schools have more than 300 pupils. Another important problem with expanding the girls' intermediate education, apart from a lack of qualified students, are the shortages of Saudi women teachers, and specialist teachers to cover a wide range of subjects. Of the 552 teachers in girls' intermediate schools in Asir only 36 (6 percent) are Saudis. This is less of a problem for boys' intermediate schools where about 29 percent of the teachers are Saudis.

As has already been made clear, there is greater inequality in intermediate education provision for girls in contrast with the boys in Asir region. Of the 248 intermediate schools, 74 percent of them are for boys and only 26 percent for girls. While 3.1 percent of the male population was enrolled at intermediate schools in 1986, only 1.2 percent of the female population was enrolled. This inequality occurs across the whole region but is more marked outside of the urban and more densely settled rural areas. Just as great efforts have been made recently to reduce the inequalities between girls and boys at the primary level, many more intermediate schools for girls are still needed.

6.6 SECONDARY EDUCATION

The secondary level of schooling serves the holders of the intermediate school certificate, usually in the fifteen to seventeen years age group. Government education policy is to make this level available to as many graduates from intermediate schools as possible. The Second development plan (1975-1980) set a national target to enrol by 1980 at least 50 percent of the intermediate school leavers of both sexes in secondary schools, but there is no data available on the total number of the secondary age population who would have been able to benefit from secondary schooling. According to an estimation by Scan Plan in 1982, 5.9 percent of Asir's population was in the relevant age group. Assuming a 4.1 percent per year rate of growth of Asir's population since 1983 the total male population of the region can be calculated for 1986 at some 598,860 and the female population for 1985 of 605,988. Thus gives an estimated 17,666 boys in the secondary school age group in 1986 and 17,878 girls in 1985. Taking actual enrollment this means that in 1986 about 41 percent of the boys of the relevant age were attending secondary schools. However, the percentage of girls of the right age group attending secondary schools in 1985 was much lower at only about 11 percent.

There are several reasons for these low rates of enrollment at this stage of education. In many cases many students in 1986 had not had the intermediate education which is a necessary prequisite for studying at this level. Even if they had, the limited provision of secondary schools in the region - 64 schools for boys and just 12 for girls - meant that many pupils were too far from schools. Most of these schools are located in urban areas or village

clusters.* As a result many students finish intermediate schooling and seek jobs or go to another area for education often outside of Asir. It is to be expected that secondary education would be the last part of the public education system to be developed in Asir. This stage needs a large investment, more skilled staffs and large catchment areas, as well as a pool of pupils educated up to the required level.

Fig. 6.3 shows the distribution of boys' secondary schools in Asir in 1986. Teacher training institutes are attached to several of them and those are also shown. These train students with intermediate level schooling to teach in primary schools. It can be seen that the majority of these schools and institutes are located in the towns and main villages of the mountain areas where the majority of Asir's population are concentrated. Seven of the 40 secondary schools in this area are in the cities of Abha (four) and Khamis Mushayt (three). Most of the others are in the chief settlements of the mountain areas which already have other services such as health and administrative services, shops, and elementary and intermediate schools for both sexes. The dry eastern part of the region has only thirteen secondary schools (20 percent of the total), most of them established in the last five years in the main centres of this area. The Tihama area which has 247 elementary schools for boys (35 percent of the total for Asir) and 39 boys' intermediate schools (21 percent of Asir's total), has only eleven secondary schools (17 percent of Asir's total).

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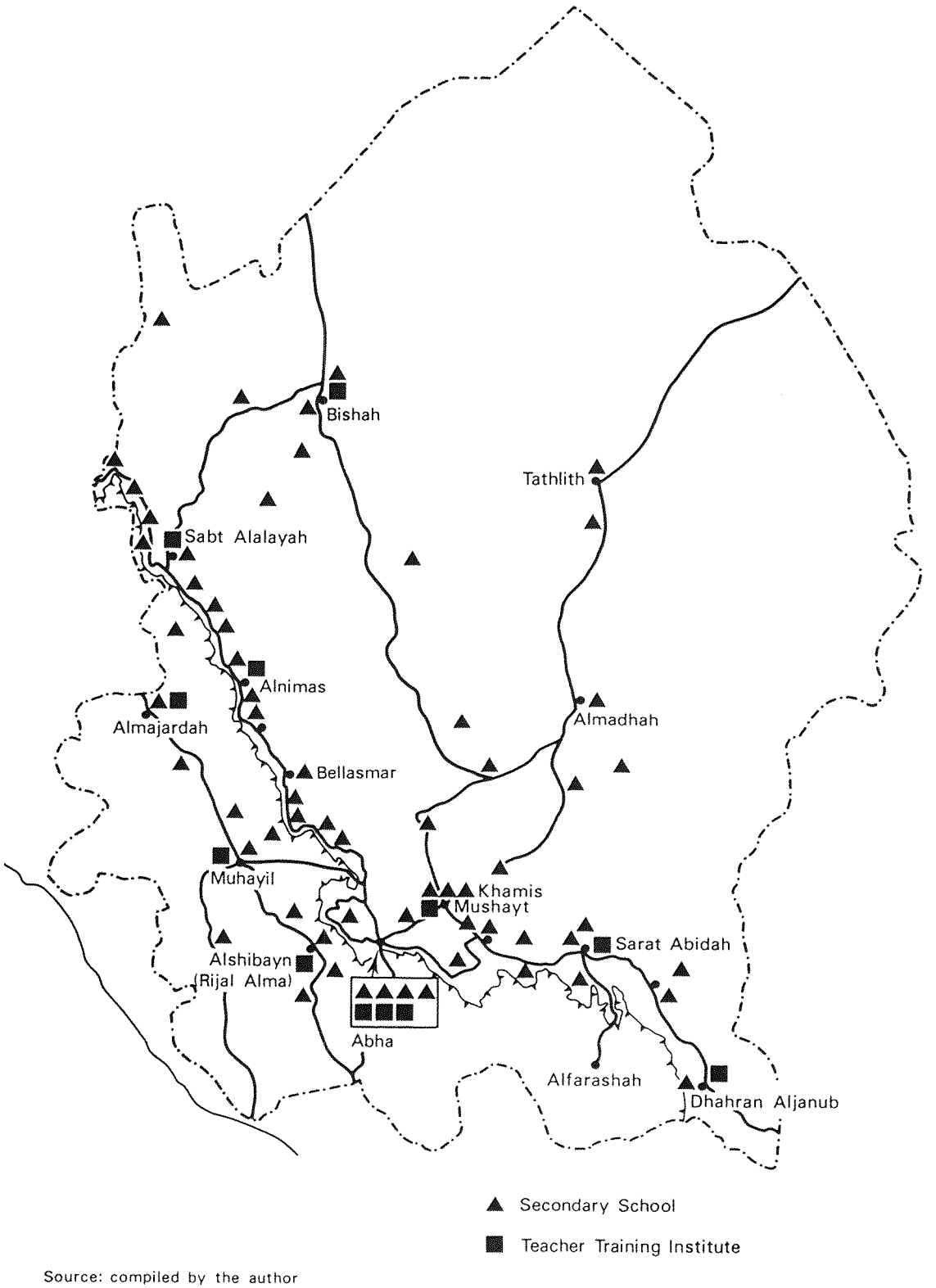
* As for intermediate schools, the establishment and management of secondary schools are closely controlled by the Ministry of Education and the General Presidency For Girls' Education in Riyadh. The planning for a new school passes through many stages involving analysis of catchment areas, enrollments in neighboring intermediate schools, the needs of the community and the location of existing secondary schools and their capacities.



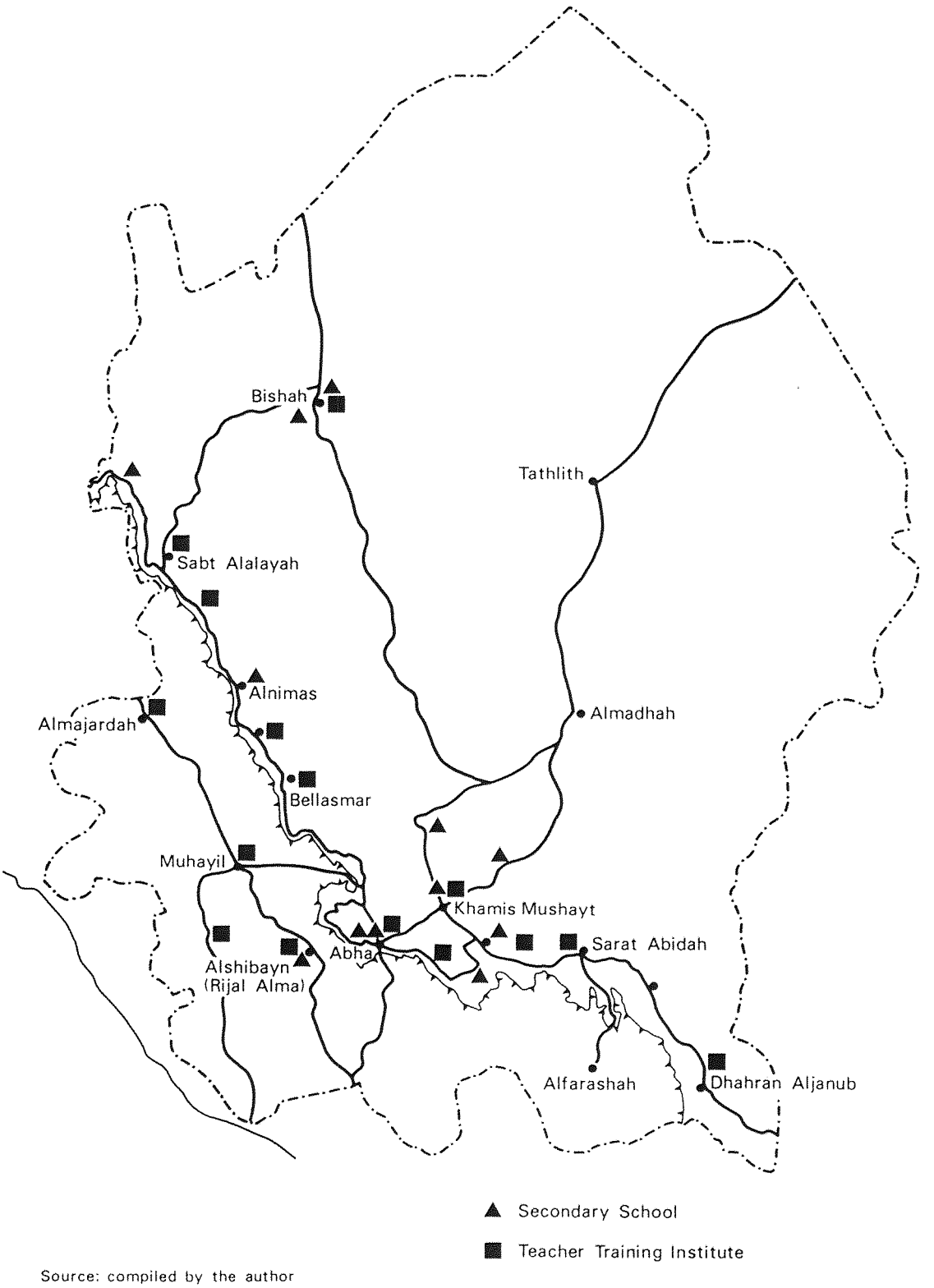
Source: compiled by the author

Figure 6.3 The distribution of Boys Secondary Schools and Teacher Training Institutes in Asir Region, 1986

There are twelve institutes of teacher training for boys in the region. Eight of them are found in the mountain areas, three of them in the city of Abha (one teacher training institute, one secondary Quranic institute and one junior college). Only one institute is located in the eastern plateau at Bishah town, but three are in the Tihama area in the centres of Muhayil, Almajardah and Rijal Alma where teacher shortages in the area's elementary schools are severe.

It has already been pointed out that because of the late development of girls' schools in Asir region most of the efforts have been concentrated in providing the basic elementary schooling. As a result little secondary schooling has yet been provided. Fig. 6.4 shows the distribution of the twelve girls' secondary schools and fifteen teacher training institutes in Asir in 1985. Most of them are located in the main settlements of the mountain ranges. The Tihama area has four teacher training institutes for girls and only one secondary school situated in the centre of Rijal Alma. The eastern plateau has two secondary schools, one located in Bishah town and one in the village cluster of Nmran, and one institute of teacher training situated in the town of Bishah. The large number of teacher training institutes for girls reflects the need to train girls to teach in the region's expanding primary schools.

Table 6.10 summarizes the rather limited scale of secondary education provision in Asir region, and the strikingly low provision of this stage for girls. Of the 103 schools only 26 percent are for girls and only 24 percent of the students enrolled are girls. While the proportion of school age boys in secondary education in Asir (at 7.6 percent) has been about the same as the national average (8 percent), the share of girls in secondary schools is much



Source: compiled by the author

Figure 6.4 The distribution of Girls Secondary Education in Asir Region, 1985

lower than the national average. Nationally about 9 percent of school girls are in secondary schools in 1985, but it is only 3.4 percent in Asir. This is partly because some girls go into teacher training instead, but it also partly reflects the general low level of schooling provision for girls in Asir.

As with other schools in Asir, the average size of boys' secondary schools is smaller at 114 pupils per school than the national average of about 189. However, the secondary schools in urban areas are much larger than in rural areas. The seventeen boys' schools in the urban centres contain 57 percent of the total number of students with an average size of 242 pupils per school. The 47 secondary schools in the rural areas had an average size of only 67 students per school and 28 of them have less than 45 pupils each. Most of the secondary schools in rural areas have been established very recently and share the buildings and staff with intermediate schools. Because of the distance between schools and some of the villages they serve some secondary pupils board closer to the school with a friend or relative.

The twelve boys' teacher training institutes in Asir are also small, nine of them sharing staff and buildings with secondary schools. Much larger is the Abha's junior college which trains teachers who already have the teacher training institute certificate. It accommodates about 29 percent of the total number of teacher training students in Asir.

The scale of secondary schooling and teacher education for girls in Asir is much smaller than for the boys. In 1985 the twelve secondary schools had a total enrollment of only 1,932 pupils. Most of these schools take the form of a class or two added onto either an intermediate school or teacher training institute. Only four secondary schools in the towns of Abha, Khamis Mushayt and Bishah are much larger than the

Table: 6.10

Secondary education in Asir.

	Boys' Education 1986 *			Girls' Education 1985 **			Total for both sexes
	Second. school	Teach. Train.	Total	Second. school	Teach. Train.	Total	
No. of schools	64	12	76	12	15	27	103
No. of pupils	7,273	1,677	8,950	1,932	893	2,825	11,775
No. of classes	335	79	414	75	41	116	530
No. of teachers	602	177	779	156	104	260	1,039

Source: * Ministry of Education, Educational Development, Data Centre, 1986.
** General Presidency For Girls' Education, Third Statistical Book, 1985.

others. They took 81 percent of the secondary girls in Asir with an average size of 392 students per school. The other eight schools have an average of only 45 students per school and half of them had less than 30 pupils each. This is partly related to the limited number of intermediate school leavers and partly to the inaccessibility of many of these schools to girls in many of the villages. Although the number of teacher training institutes for girls outnumbers the secondary schools, they contained less than half of the enrollment of secondary schools with only 893 students and an average size of only 60 pupils per institute.

This chapter has shown that the development of schooling has made considerable progress in Asir in the last fifteen years, paricularly for boys' elementary schools, but increasingly in recent years for girls. The educational facilities have spread from the main urban centres into every part of the region, although many communities still have inadequate access to school, especially at the higher levels and particularly for girls. It is clear that there is still much less provision for girls than for boys in Asir. 64 percent of the region's schools are for boys and only 36 percent for girls. Furthermore, there is evidence from the enrollment data to suggest that not all school-age children are yet in primary, intermediate or secondary schools which indicates that many more schools are still needed, particularly for girls and for post-elementary levels. More detailed analysis of these points will be considered in chapter eleven in the case study part of the thesis on the basis of the author's own fieldwork.

CHAPTER SEVEN

EVALUATION OF PUBLIC SERVICE PROVISION IN ASIR, II

7.1 HEALTH SERVICES

7.1.1 THE SCOPE OF THE HEALTH PROBLEM

As in the case of education, most health care provision in Asir has been developed very recently. Therefore little information about the medical needs of the population has yet been built up, and it is only possible here to attempt a preliminary evaluation of health facilities which have been created in recent years. A more detailed assessment of facilities in the Sarat Abidah part of Asir is attempted on the basis of field survey in chapter twelve.

Despite the commitment of the government to provide the finest health services free to all inhabitants of the Kingdom, Asir is still poorly served compared with the level of health facilities in the rest of the nation. This is partly because its pattern of scattered village communities is difficult to serve, but it is also because of Asir's remoteness from the centres of political influence.

The fact that Asir is less well provided than other regions can be seen in several ways. For example, the national ratio of physicians to population was 1:615 in 1986, but the ratio for Asir was one doctor per 1,511 persons. Asir region also rates below the national average in terms of other medical staff. Whereas there was one nurse per 283 persons in the Kingdom in 1986, there was only one nurse per 580 in Asir region. While the national ratio of hospital beds to population was 3.2 per 1000 in the Kingdom in 1986, it was only 1.2 per 1000 in Asir because Asir has so few hospitals. The inadequacy of health facilities in

Asir and of the Southern region of the country in general has been noted in studies of the distribution of health services in the Kingdom of Saudi Arabia, by El Bushra (1980), Al-Rawaf (1980) and Tamas (1986).

Because Asir is geographically divided into three main areas, each different in its climate, physical environment and ways of life, each can be expected to display different common health problems. The more densely populated mountain areas with better education and other facilities including more health services, should generally enjoy better health than the more nomadically populated Tihama. Here and in the eastern part of the region living standards are lower, there is much greater remoteness and a more difficult climate and terrain to contend with. But there is little information on common health problems in the region or differences across the region to allow much detail to be added.

In general terms Asir, as a predominantly rural region, is still characterized by high mortality rates due to preventable diseases and inadequate access to health services. The infant mortality rate of 100 or more per 1000 live births is an indication of poor health facilities (Al-Qahtani, 1985). Poor drinking water, lack of hygiene, malnutrition and certain communicable diseases are still prevalent not only in the more isolated parts but all over the region. Malaria, leishmaniasis and bilharzia pose major public health problems according to various government reports and individual studies.

One reason why little information is available on health conditions in Asir is because health records have only been kept for a short time. They also remain incomplete because they are only based on those people who have visited health services for treatment. Many people, particularly in the Tihama and amongst nomads in the east of the region, still

make little use of the available medical facilities because of their remoteness or because they are unaware of them. Hence less is known of their health problems. Al-Qahtani (1985), for example, reported that malaria is found amongst 11 to 50 percent of school children in areas like Bariq, Muhayil, Khamis Mutayr and Haswah in the Tihama area. He found it amongst more than 50 percent of children in the areas of Alfarashah, Alfatihah and Almajardah also in the Tihama.

Sebai (1985) has reported that leishmaniasis is widespread in Asir particularly in the Bishah area. He claimed that of 620 patients who attended the dermatology outpatients' clinic during one month in Bishah town in 1974, 18 percent were identified as sufferers from cutaneous leishmaniasis. Also Peters and Al-Zahrani (1987) pointed out that cutaneous leishmaniasis was highly prevalent in the Bishah and Khamis Mushayt areas. According to the 1985 annual health report of the Ministry of Health 2,144 cases of cutaneous leishmaniasis were found in Asir region in that year and these represented more than 16 percent of the total cases identified in the Kingdom.

Bilharzia is also endemic all over the region particularly in the lowland areas like the Tihama and around Bishah. Because of the lack of potable water many of the population drink untreated water from wells and wadis and succumb to the disease. During 1985 a total of 3,164 cases of bilharzia were diagnosed in Asir region. These cases made up more than 20 percent of the total cases diagnosed in the Kingdom in 1985.

Table 7.1 shows the reported infectious diseases in Asir region for selected years from 1980 to 1986 reported by the Ministry of Health. Reported cases fell rapidly over this period but these records are only based on those people who

Table: 7.1

Notification of infectious diseases in Asir, 1980-86.

Diseases	1980	1981	1983	1985	1986
Diphtheria	-	2	1	-	-
Measles	5054	4536	3249	2093	1413
Mumps	1919	1412	3249	1126	1837
Scarlet Fever	23	12	23	71	-
Whooping Cough	379	806	659	75	45
Typhoid	10	28	23	19	29
Tetanus	4	2	10	14	4
Puerperal Fever	26	44	42	5	6
Chicken Pox	203	378	513	947	871
Encephalitis	13	5	5	31	18
Leprosy	4	7	9	7	4
Rabies	1	1	8	-	1
Infective Hepat	332	403	556	1646	1038
Amebic Dysent.	16489	13286	9267	3729	5094
Influenza	29702	24791	16998	1707	No Data
Malaria	7857	8668	9784	1020	No Data
Paralysis	37	15	10	7	2
Tuberculosis	1176	972	1075	239	No Data
Venereal Disea.	123	108	114	25	49
TOTAL	63,352	55,476	44,225	12,761	10,411

Source: Column 1-3, Al-Qahtani, 1985.
Column 4-5, Ministry of Health, Annual Health Reports, 1985 and 1986.

came for medical attention so that the illnesses of many rural and nomadic families who did not ask for medical help went unreported. It can be seen that influenza, amebic dysentery, malaria, measles, mumps and tuberculosis were most common especially in the earlier years of records. Rather less common were whooping cough, chicken pox, infective hepatits and venereal diseases. It is also noticeable that some of these infectious diseases, such as measles, whooping cough, influenza, and amebic dysentery were decreasing largely due to the extensive efforts of immunisation programmes. But some of them such as mumps, infective hepatitis, and chicken pox did not decline or have become more serious problems.

Table 7.2 throws further light on the morbidity pattern in Asir region. This is based on the diagnosis, or just the impression, by physicians of types of diseases patients were suffering from during their visits to health facilities in the region in 1986. As such it is not a complete survey of all health problems and could contain inaccuracies in the diagnoses made, often in brief examinations. This Table shows that several medical conditions were much more common problems than the communicable diseases partly outlined in Table 7.1. It can be seen that problems of a gastro-intestinal nature, ear, nose and throat, chest diseases, skin disease and musculo-skeletal problems accounted for 55 percent of the causes of reported morbidity. Mouth and dental problems, wounds, fraction and burns, eye diseases, gynecological, obstetrics and genito-urinary problems constituted another 25 percent of all diagnosed cases. Rather less important were communicable diseases, cardio-vascular and mental and psychiatric disorders.

This information does not, however, give any indication of variation in morbidity patterns between different groups

of the population, nor do they show any variations in health problems between the different parts of the region. But some variations in morbidity patterns might be deduced from the different types of diagnoses reported from the primary health care centres and the hospitals, as most of the primary health centre attendances were by rural inhabitants and the majority of hospitals visitors would be from the urban areas. Table 7.2 suggests that chest diseases, musculo-skeletal and ear, nose and throat diseases were more commonly diagnosed amongst the rural areas. Together these diagnoses accounted for more than 42 percent of all cases in primary health care centres. In the urban areas, on the other hand, they accounted for less than 17 percent of all diagnosed diseases. Here mental and psychiatric, cardio-vascular, genito-urinary, gynecology and obstetrics, eye diseases, mouth and dental problems and minor surgery appear more common cases treated in hospitals than in the primary health centres. This may not be because the people in the urban areas suffer more from these health problems but because the hospitals have more facilities to deal with them, so that more people report to hospitals for these forms of treatment. However, it might suggest that there is some difference in health problems between the more settled and less settled parts of the region.

Until recently the health services have concentrated on curative care because of the scale of the ill health problem. Less attention has actually been given to preventive medicine, despite the fact that most of the prevalent diseases such as malaria, measles and bilharzia require preventive approches to control them and many other health conditions would benefit from preventive measures. It was not until 1980 that the Asir Health Affairs Directorate established a separate Preventive Medicine Department to

Table: 7.2

Diagnosis of cases attending primary health care centres and hospitals in Asir region during 1986.

Type of Diseases	P. H. C. C.		Hospitals		Total	
	Cases	%	Cases	%	Cases	%
Communicable	14,402	0.3	11,292	0.6	25,694	0.4
Cardio-Vascular	64,058	1.5	72,946	4.1	137,004	2.3
Mental and Psychiat.	9,096	0.2	157,476	8.9	166,572	2.8
Chest Diseases	620,818	14.9	94,652	5.4	715,470	12.1
Gastro-intestinal	590,366	14.2	202,485	11.5	792,851	13.4
Genito-Urinary	150,501	3.6	92,189	5.2	242,690	4.1
Gynecology & Obstet.	131,787	3.2	116,220	6.6	248,007	4.2
Skin Diseases	281,973	6.8	125,909	7.1	407,882	6.9
Musculo-Skeletal	484,789	11.7	79,828	4.5	564,617	9.5
Eye Diseases	201,070	4.8	136,833	7.8	337,903	5.7
E.N.T. Diseases	654,718	15.8	121,270	6.9	775,988	13.1
Mouth and Dental	229,623	5.5	122,249	6.9	351,872	5.9
Wound, Fract. & Burns	211,072	5.1	70,411	4.0	281,483	4.8
Minor Surgery	33,456	0.8	178,857	10.1	212,313	3.6
Other Diseases	477,562	11.5	182,795	10.4	660,357	11.0
TOTAL	4,155,291	100.0	1,765,412	100.0	5,920,703	100.0

Source: Ministry of Health, Annual Health Report, 1986.

carry out all preventive health activities in the region. Malaria control was the first major programme. Three main malaria control stations were established at Abha, Bishah and Muhayil. The Abha station set up a small branch at Alfarashah in the Tihama where malaria is widespread. During 1985, 25,700 persons were examined for malaria, and 17,544 houses in 2,282 places were sprayed by D.D.T.

Three stations were also set up at Abha, Bishah and Muhayil to try to control the spread of bilharzia. Because it is a water-borne disease 15,922 water sources were examined for bilharzia in 1985, of which 1630 were found positive. A major immunisation programme has also been started. During 1986 a total of 429,089 vaccines were given by the hospitals and the primary health care centres in Asir region. These included vaccines against poliomylitis, measles, tuberculosis, tetanus, diphtheria and others.

7.1.2 THE DEVELOPMENT OF HEALTH SERVICES

The development of health facilities in Asir, as elsewhere in Saudi Arabia, occurred slowly until very recently due to the fact that much medical development in the country did not get underway until after 1970 especially following the rapidly rising flow of oil revenues. The expansion in the nation's health provision was at first concentrated in the large urban centres of the Kingdom so that in a predominantly rural region like Asir health care provision was restricted to a few towns. More recently the government has committed itself to the provision of health care to all sectors of the population. Therefore greater efforts have been made in providing a basic level of health care in the rural parts of Asir in the last few years.

There is little detailed data available on the

development and spread of these health services in the region and much of the available information is subject to considerable inaccuracy for admininstrative and other reasons. For example, health facilites in the Southwest region of the Kingdom, including Asir, Najran and Jizan provinces were under one administrative office located at Abha until 1982. Data on health provision in Asir up to this date is limited. But with the reorganization of the Ministry of Health eleven regional health directorates were created in the country, and the Southwest region was divided into three regional health affairs directorates, Asir, Najran and Jizan. More health data for Asir is available for the years since 1982.

Nevertheless it is clear that until 1945, there was only one medical clinic in Asir and this was in Abha. This was staffed by only one doctor and a few medical assistants. At the time of the establishment of the Ministry of Health in 1951, there were still only a few health points located in the larger settlements of Asir, each staffed by a male nurse offering very limited health care to the local population. With such limited health facilites in Asir until recent years, most illnesses were usually treated at home by the family or by traditional healers.

Available data from various sources has allowed the development of health services in Asir since 1963 to be traced out in Table 7.3. It can be seen that in 1963 Asir and Najran provinces together had only three small hospitals of which two were located close to each other at Abha and Khamis Mushayt. The total capacity of these three hospitals was only 154 beds. Beside the hospital services there were eight dispensaries scattered across the huge areas of the two provinces. Each was usually staffed by a doctor and a few medical assistants. There were also 24 health centres,

Table: 7.3

Development of health facilities in Asir, 1963-1986.

Year	No. of Hospit.	No. of Beds	No. of Dispen.	No. of PHCC	No. of Physic.	Nursing Staff	Technical staff
1963 *	3	154	8	24	-	-	-
1970 *	5	373	19	78	58	210	97
1975 *	7	567	29	88	117	422	117
1980	6	763	100	57	325	552	419
1984	7	928	-	177	498	1011	627
1985	7	1081	-	195	661	1779	898
1986	13	1472	-	214	803	2092	987

Note: * Included Najran Province.

Source: 1963-1975, Al-Zaidi, 1984.
1980-1984, The Statistical Year Book, Vol, 17 and 20.
1985-1986, Ministry Of Health, the Annual Health Reports, 1985 and 1986.

each staffed by one male nurse and one or two assistants. No data is available on where each of these clinics and health points were located but it can be assumed that they were to be found in some of the subemirate centres and the large villages.

By 1970 the health services in Asir and Najran had witnessed some more expansion. The number of hospitals had increased from three with 154 beds in 1963 to five with 373 beds. Asir had four of these hospitals, at Abha, Khamis Mushayt and Bishah, with a small sanatorium also located at Abha to deal with chest and infectious diseases. The number of dispensaries had increased to nineteen, from eight in 1963, and the health points also grew by more than three fold. Even so the whole medical manpower in the two provinces in 1970 totalled only 58 physicians with 307 medical assistants.

During the period 1970 to 1975 the health facilites saw more rapid expansion. Of the two new hospitals established in this period one of them was located in southern Asir at Dhahran Aljanub and the other in Najran. The number of dispensaries and health points increased by 21 percent and the number of various types of medical personnel, particularly technicians, also expanded rapidly. There was a doubling of the number of physicians between 1970 and 1975.

Between 1975 and 1980 most growth in health facilities occurred by enlarging the existing hospitals and increasing the number of dispensaries especially by upgrading some of the health points. The five hospitals at Abha, Khamis Mushayt, Bishah and Dhahran Aljanub were joined by another smaller one at Muhayil in the Tihama. The total capacity of these hospitals rose to 763 beds to give an average size of 127 beds per hospital. The number of dispensaries had increased to 100 by 1980, partly by the upgrading of some

health points whose number fell as a result. The number of medical personnel including physicians, nursing staff and technicians also expanded in keeping with this growth.

With the initiation of the Third national development plan in 1980, the Asir region saw a rapid improvement in the provision of health facilities in terms both of the quantity and the quality of preventive and curative aspects of health care. The plan stressed the provision of health care to all sectors of the population whether they live in urban or rural areas. Because most efforts during the earlier period had been concentrated on curative medical services through hospitals and immediate treatment of diseases through dispensaries, the 1980-1985 plan put more emphasis on preventive medicine by increasing community health work and by creating primary health care centres. This emphasis is obvious from the statement in the plan for a health development policy:

- To expand significantly a broad range of preventive health measures, including vaccination programmes, environmental health and hygiene, health education, early screening, mother and child care programmes, to be carried out through medical staff attached to the primary care centres, and through local community health workers;

- To expand and reorganize the present systems of dispensaries and health points into a newly structured network of primary health care composed of:
    - Grade 1 health centres, to serve communities with 1,000-5,000 inhabitants;
    - Grade 2 health centres, to serve communities with 5,000-10,000 inhabitants;
    - Grade 3 health centres, to serve communities with 10,000-20,000 inhabitants;
    - Grade 4 health centres, to serve the districts of the large cities. (Third plan, 1980, p. 348).

During the period of the Third development plan (1980-84) only one new hospital was established in Asir, although others were being constructed. This was a small unit with 36 beds for psychiatric cases at Abha. But 282 new beds, a 42 percent increase, were provided by expanding the

existing hospitals. But more importantly, under the health centre policy, all dispensaries and health points were given more resources and improved to become primary health care centres of different grades. In addition 38 new primary health centres were opened in the plan period. This increased the total number by 24 percent, eighteen of them being established in 1984 and 1985 alone. Along with this growth the numbers of various types of medical personnel were increased rapidly. The number of physicians increased by 103 percent, nurses by 222 percent and technicians by 114 percent.

The year 1986 saw another major expansion of facilities. Six new hospitals were opened in that year alone to provide 334 new beds, a 36 percent increase on the previous year. Two of them with a capacity of 100 beds each were set up at Alnimas and Bellasmar to provide more facilities in the mountain villages. The other four were much smaller hospitals established in Sabt Alalayah (40 beds), Ahad Rufaydah (32 beds), Rijal Alma (32 beds) and a further unit at Khamis Mushayt town (30 beds). These small hospitals were created by the upgrading of some of the fourth grade health centres to the status of hospitals because of the large demands for hospital services in these parts of the region.

Nineteen primary health care centres were also established in Asir in 1986 to bring this service into virtually every large cluster of villages. A similar major expansion also occurred in the number of medical staff. The number of physicians working at the hospitals and the health centres increased by 21 percent, nurses and midwives by 18 percent and technicians and other medical assistants by nearly 10 percent.

It is clear from this that the provision of health facilities in Asir region has improved rapidly since 1980

with 1986 as a peak year. In six years the number of hospitals more than doubled, hospital beds nearly doubled, and health centres also grew by more than one third. In these few years there has also been an impressive growth in the number of staff. Even so with a regional population of more than one million living in more than 4,000 settlements, the problems of distributing and matching health facilities to the needs of the people present great problems. Only one village in every twenty has a health centre and many villages can be far from the nearest hospital.

Significant inequalities in the current coverage of health facilities are further aggravated by the fact that there are few medical facilities provided by other government agencies in Asir such as the Ministry of Defense and Aviation, the National Guard, the National Security and the Universities, unlike in other regions of the country. These are largely concentrated in Riyadh and Jeddah. In 1986 there were 30 hospitals in the Kingdom provided by government agencies not under the control of the Ministry of Health. These had 6,283 beds and were staffed by 3,575 physicians and 12,297 medical assistants. Asir region has only two small non-Ministry of Health hospitals with only 330 beds. These are both Ministry of Defense hospitals located at Khamis Mushayt Military Town. None of the 41 private hospitals in the Kingdom in 1986, containing 4,474 beds, are in Asir.

Medical services provided by the private sector in Asir region are still at an early stage of development compared with other regions in the Kingdom. In 1986 there were only eighteen private clinics in Asir all located in the main urban centres of the region, particularly in Abha and Khamis Mushayt. The total number of physicians working in these clininics was 112, or only 3.8 percent of the Kingdom's

private physicians. Even so these private physicians make up about 12 percent of all doctors in the region. The total number of patients who visited the private dispensaries in Asir region in 1986 was 126,642. This is equal to only 2 percent of the total out-patient visits to health facilities in the region in 1986 so that the contribution of the private health sector to total health care in the region remains small.

In other regions the non-Ministry of Health and private clinics make a significant contribution to health care, especially in the urban areas where they are mainly located. This is less the case in Asir. This means that the Ministry of Health has a more important role in providing total health services for Asir region than in other regions to meet the needs of the urban centres as well as the more rural areas. It should also be made clear that outpatient departments in Saudi hospitals deal with many patients who are able to come direct to the hospitals without being referred by the local clinic or health centre. Many Saudis prefer to go direct to the hospital when ill in the belief that they will get better treatment than at the health centre.

7.1.3 HOSPITAL SERVICES

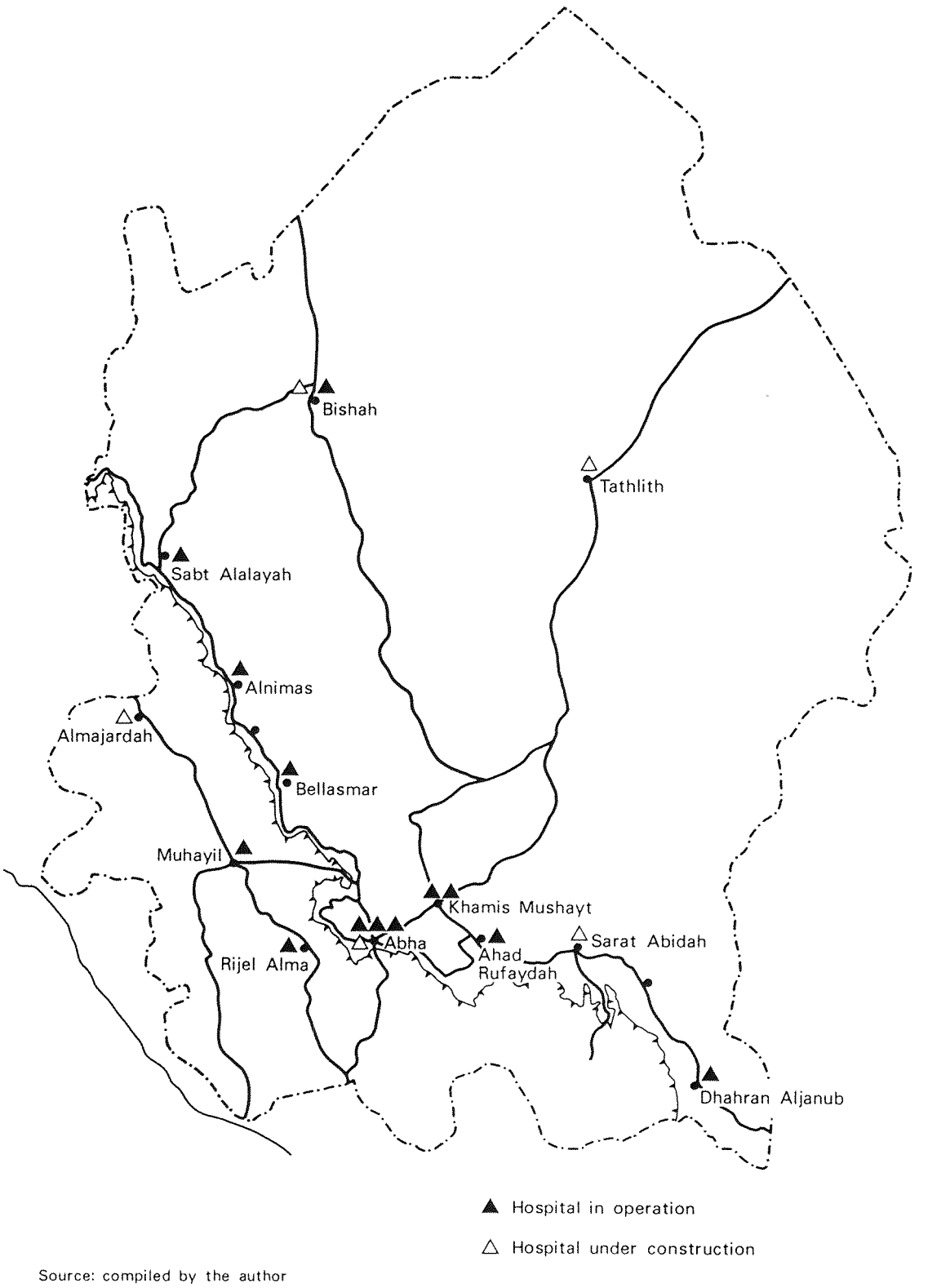
All hospital provision for the general population in Asir is by the Ministry of Health. Asir had thirteen hospitals in 1986 with a total of 1,472 beds, an average of 113 beds per hospital. Six of the hospitals had just started to operate in that year and Asir remains underprovided with hospitals compared with the rest of the country. With more than 10 percent of the population it has only 6 percent of the total number of beds provided by the Ministry of Health

and 4 percent of the total number of beds in the Kingdom if all types of hospitals are considered.

The distribution of the thirteen working hospitals in Asir (and five more under construction) are shown in Fig. 7.1. It can be seen that the majority of these hospitals are located in the well populated mountain areas. The eastern part of the region has only one hospital located at Bishah town. In the Tihama there are only two small hospitals situated at Muhayil and Rijal Alma. Because of the clear inadequacy of the existing hospital services in the region in the late 1970s which left many areas far from a hospital, the Ministry of Health planned to established seven more hospitals with an extra 1,519 beds during the Third develoment plan (1980-1985). Three of these were in operation by 1986. These new hospitals included Asir Central Hospital at Abha with a capacity of 500 beds which was not yet open in 1986. Also not yet open is Bishah General Hospital with 345 beds. These two are in addition to hospitals already working in Abha and Bishah.

Five small general hospital with a capacity of 100 beds each are being set up at Alnimas, Bellasmar, Sarat Abidah, Almajardah and Tathlith. Two of these hospitals, at Alnimas and Bellasmar, started to operate in 1986 and the rest were expected to operate by 1990. Each of these hospitals is intended to have specialized surgical and medical facilities as well as accident and emergency departments. Clearly by opening new hospitals at intermediate locations along the escarpment north and south of Abha, and by adding another in the Tihama and the eastern area, hospital services will become much more accessible to many more of the population. In addition Abha and Bishah will get better services.

Table 7.4 shows the extent to which Abha, and to a lesser extent, Bishah have become the two hospital centres



Source: compiled by the author

Figure 7.1 Distribution of Hospital Services in Asir Region, 1986

of Asir. Abha already has the largest hospital in the region with a total capacity of 296 beds or more than 20 percent of the total beds in Asir. It will soon have an additional 500 beds in the new hospital to greatly boast this share of hospital service. It also has 19 percent of the total number of physicians, 28 percent of nurses and 20 percent of technicians. There are also two specialist units in Abha, the chest and infectious diseases hospital and a psychiatric unit.* The second largest hospital in the region is at Bishah town containing 16 percent of the total beds in Asir. Bishah will soon get a second hospital with 345 beds. In general terms Asir's hospitals remain small compared with the average size of the Kingdom's hospitals of 164 beds per hospital.

In spite of these expanding services it is unlikely that all hospital needs will be met for the near future. Demands on hospital services in Asir region have increased very rapidly in the last few years as a direct result of the rising standards of living and increased accessibility to the services. This can be seen in the large increase in out-patients visits and in-patients in the hospitals. Table 7.5 shows the number of admissions and outpatient visits to hospitals in Asir between 1982 and 1986. It can be seen that the inpatients increased 99 percent from 31,548 in 1982 to 62,711 in 1986, a larger increase than the increase in the number of beds.** Outpatient visits to the hospitals also

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* Table 7.4 shows that if one considers Abha and its close neighbour Khamis Mushayt together, they dominate in the hospital provision of Asir even before Abha's new hospital opens. Together they have more than 48 percent of the total number of beds in Asir's hospitals. In 1986, 51 percent of all operations in Asir's hospitals were carried out in Abha and Khamis Mushayt.

** 30 percent (18,813) of the total number of admissions in 1986 were for surgical operations. 32 percent of operations were obstetrics and gynaecology, 31 percent general, 16 percent bone, 8 percent ear, nose and throat,

Table: 7.4

Distribution of hospitals, beds and hospital and medical personnel in Asir region, 1986.

Hospitals	Beds	Physic.	Nurse	Techni.	Administ.	Servant & other	Total Staff
Abha General Hospital	296	88	369	99	31	92	679
Chest & Infectious Hospital, Abha	110	12	41	17	11	34	115
Psychiatric Hosp., Abha	100	12	53	20	21	48	154
Khamis Mushayt General Hospital	174	62	171	87	17	51	388
Khamis Mushayt Central Area Hospital	30	15	21	16	4	12	68
Bishah General Hosp.	236	73	137	42	44	81	377
Dhahran Aljanub Hosp.	97	33	89	34	13	58	227
Muhayil General Hosp.	125	47	124	48	15	71	304
Bellasmar Hospital	100	29	66	39	11	3	148
Alnimas Hospital	100	41	111	26	14	6	198
Sabt Alalayah Hospital	40	20	43	21	6	21	111
Ahad Rufaydah Hospital	32	18	36	19	6	14	93
Rijal Alma Hospital	32	16	37	17	7	23	100
TOTAL	1472	465	1298	485	200	514	2962

Source: Ministry of Health, Annual Health Report, 1986.

increased from 1,154,038 in 1982 to 1,878,827 in 1986, an increase of 63 percent. This was a lower rate of increase because of the expansion of primary health care centres in places without hospitals.

Table: 7.5

Admissions and outpatient visits to hospital in Asir region, 1982-1986.

Year	Admissions	% Increase over year	Out patients	% Increase over year
1982	31,548	-	1,154,038	-
1983	38,737	22.8	1,497,082	29.7
1984	45,044	16.3	1,593,522	6.4
1985	50,303	11.7	1,848,289	16.0
1986	62,711	24.7	1,878,827	1.7

Source: Ministry of Health, Annual Health Reprot, 1986.

It seems that the level of use of the hospital services in Asir region is much lower than the national level, based on the number of in and outpatients compared with the population size. While the national average rate of outpatient visits to hospitals was more than two visits per person in the population in 1986, it was less than 1.5 visits for Asir region. National rates of admissions to hospitals were 84 per 1000 population in the Kingdom in 1986 compared with only 53 per 1000 persons for Asir region. Unfortunately no further data is available on where hospital patients come from so that it is impossible to see if the population in the remote villages were more deterred from hospitalization by the difficulties of getting to hospitals than those people who live closer to them.

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8 percent eyes, 4 percent urinary tract and 1 percent were for chest and plastic surgery.

The data does not allow a detailed examination of the pattern of hospital facilities and their use but there are clearly major problems of matching resources locally to demand. The increase in hospital provision in recent years to meet rising demands has gone someway to meet needs, but major problems remain and the needs continue to expand. One problem is that Asir's hospitals are not specialized enough for many needs. This results from having to establish local hospitals close to the main areas of population, but the small hospitals that result are unable to provide more specialist services. As a result more than half of the existing hospitals are in poor structural condition with inadequate space for laboratories, modern operating theatres and specialist units. Four of Asir's recently opened hospitals have less than 40 beds and would more accurately be described as outpatient centres. They are not equipped to perform operations.

Asir's hospitals are not well equipped to provide more specialist facilities such as radio-therapy, neurosurgery and most of the complicated surgeries, where transfer to Jeddah or Riyadh hospitals is required. But a more urgent need is to improve facilities for ordinary diagnostic work and treatment, with more units for maternity, pediatrics, burns and plastic surgery, dermatology, chest diseases, ear, nose and throat diseases, and accident and emergency treatments.

Some indication of the imbalance between available hospital resources and needs can be deduced from the level of use of various types of hospital beds. Table 7.6 shows the distribution of beds by type of use, and physicians by field of specialization, in Asir hospitals in 1986. By comparing the present distribution of beds and the types of surgical operations carried out by Asir's hospitals in 1986,

Table: 7.6

The distribution of physicians by specialization and beds by types of use in the hospitals of Asir, 1986.

Type of use and field of specialization	Beds		Physicians			
	No.	%	M	F	Total	%
General	40	2.7	187	44	231	49.7
Dentists	-	-	22	7	29	6.2
Internal Diseases	250	17.0	17	-	17	3.7
Internal Surgery	236	16.0	27	-	27	5.8
Bone Disease	111	7.5	12	-	12	2.6
Urinary Tract	50	3.4	6	-	6	1.3
Obstetrics and Gynecology	140	9.5	16	6	22	4.7
Pediatrics	152	10.3	17	2	19	4.1
Ear, Nose and Throat	46	3.1	6	-	6	1.3
Opthalmologist	44	3.0	7	-	7	1.5
Chest Disease	67	4.6	6	-	6	1.3
Neurology and Psychiatry	100	6.8	3	1	4	0.9
Burns and Plastic Surgery	17	1.2	-	-	-	-
Quarantine and Isolation	145	9.9	-	-	-	-
Reviving	21	1.4	-	-	-	-
Others	53	3.6	66	13	79	17.0
TOTAL	1472	100.0	392	73	465	100.0

Source: Ministry of Health, Annual Health Report, 1986.

it can be deduced that some types of beds are probably under more pressure than others. For example about 32 percent of the total surgical operations are described as obstetrics and gynecology but only 9.5 percent of beds are appropriated to these headings. Similarly while more than 8 percent of surgical operations were carried out on the ear, nose and throat and 13 percent of outpatients visits in 1986 were also for this kind of disease, there are only 46 beds (3 percent) of the total number of beds in Asir's hospitals designated for ear, nose and throat probllems.

Clearly some operations require a shorter stay in a hospital bed than others, so that more patients can be dealt with in fewer beds. But the data might suggest why hospital services appear less efficiently used than in other parts of the Kingdom. Unfortunately the author's case study area, reported later in this thesis, contained no hospital so that he was unable to analyze local use of hospital facilities further.

Hospital services throughout the Kingdom face problems of getting suitable staff and there is an especial problem in Asir far from major centres. Shortages of physicians have been acute because there are few trained Saudis and the area is not attractive to specialists from other countries. This means that hospitals cannot attract specialist staff in particular. For instance, of the 465 physicians working in Asir's hospitals only three of them are Saudis. As a result nearly 50 percent of all hospital physicians in 1986 were general practitioners. Specialist doctors occur in much smaller numbers including only 29 dentists (6 percent), 27 surgeons (6 percent) and 22 obstetrics and gynecology specialists. There were only 19 pediatric specialists (4 percent of all hospital physicians) to deal with most of the children who made up 30 percent of visits to the outpatient

departments of Asir hospitals. Female doctors only constituted about 16 percent of all physicians working in the hospitals and only 27 percent of doctors specializing in obstetrics and gynecology. This shortage of female physicians could be expected to greatly reduce the level of use of health services by women because of the strong belief in the need to segregate males and females.

7.1.4 PRIMARY HEALTH CARE SERVICES

In recent years the primary health care services have gained greater importance as a means of providing preventive medicine at many more points closer to the population and as a means by which patients can enter the health system for transfer, as necessary, to hospital for more specialist treatment. Since 1980 under the Third Development Plan the role of primary health care centres (PHCC) has been enlarged, increasing their number, providing some with more resources, and by organizing them into different grades according to the quality of services, their capabilities and size of communities they serve.

But progress in health centre provision has in fact been slower in Asir than in other regions. This is mainly because of the scale of the problem. With 10 percent of the Kingdom's population the Asir region is the second largest health region in the Kingdom with 214 primary health care centres in 1986, or about 15 percent of the total health centres in the country. However, Asir has 29 percent of the villages in the Kingdom and more than 30 percent of the Kingdom's rural population. It also still has large communities of nomads particularly in the Tihama area and the eastern part of the region which are especially poorly served with primary health care centres. But many of Asir's

214 primary health care centres are small and understaffed so that even though it has 15 percent of the Kingdom's health centres, it has only 10 percent of the physicians, 10 percent of the dentists, 13 percent of the nurses and 12 percent of the technicians working in those centres nationally.

Detailed information is not available on the distribution of primary health care centres in the region, but an attempt has been made in Table 7.7 to examine their general distribution within the subregions in Asir. It can be seen that the number of primary health care centres varies from only five to 47 in different areas. Muhayil and Alnimas have the highest number of health centres, while Tathlith and Dhahran Aljanub subregions have the lowest. Part of this variation results from population sizes and village numbers in each subregion, but using figures on the ratio of population to primary health care centres, it seems that some areas are much better served than others. On a population basis the best served areas were Alnimas, Abha and Sarat Abidah with a ratio better than one primary health care centre to 5,000 population. The worst served areas was Tathlith with 12,961 persons per health centre. While Khamis Mushayt with 6,979 persons per health centre comes out as relatively poorly served, it is important to note that it also has a general hospital with large facilities for ouptatients and a small hospital mainly for maternity care, so that many patients do not need to go to a primary health care centre and often prefer to go direct to the hospital outpatient departments.

Table 7.7 also lists the ratio of primary health care centre to villages in each subregion because accessibility to health centre will vary between more urban and rural areas. A simple population ratio may not indicate this.

Table: 7.7

The distribution of primary health care centres by subregions in Asir, 1986

Subregion	No. of P.H.C.C	No. of Villages	Population 1986	Ratio of P.H.C.C. to Population	Ratio of P.H.C.C to Villages
Abha	26	392	129,733	1: 4990	1: 15
Khamis Mushayt	28	465	195,414	1: 6979	1: 17
Muhayil	47	1580	268,007	1: 5702	1: 34
Alnimas	37	509	138,106	1: 3733	1: 14
Sabt Alalyah	14	218	87,253	1: 6232	1: 16
Bishah	25	212	147,807	1: 5912	1: 8
Tathlith	9	136	116,647	1: 12961	1: 15
Sarat Abidah	23	427	113,035	1: 4915	1: 19
Dhahran Aljanub	5	68	28,264	1: 5653	1: 14
TOTAL	214	4007	1,224,266	1: 5721	1: 19

Note: Population figures based on 4.1 percent annual increase over 1983 base figures from Asir Emirate Study.

Thus, while Muhayil area in the Tihama has a large number of health centres and a favourable ratio of health centre to population, it can be seen to have a very high ratio of villages to health centre. On average each primary health care centre serves 34 villages, virtually twice the number of villages for each health centre in other subregions. Furthermore, health provision in the Muhayil subregion is aggravated by the fact that the quality of the road network is poor compared with more populated mountain areas. On the other hand the Bishah subregion has the lowest ratio of villages to health centre in Asir (8:1), but this neglects the fact this area is characterized by large nomadic communities which do not live in villages and are often far away from these services.

The present provision of 214 primary health care centres to serve over 4,000 villages would appear to be inadequate, given the rugged terrain and the considerable distances between villages without health facilities and those with facilities. There is only one health centre on average for every nineteen villages. It was concluded in the last chapter that with 702 primary schools for boys this still leaves some children too far from school. It is unlikely therefore that all in need of medical care can get to the nearest primary health care centre when so few villages have them.

Interviews with the Directors of the Primary Health Care Department and the Planning and Budgeting Department in the Asir Health Affairs Directorate revealed that it is officially recognized that the distribution of primary health care centres is uneven, given the distribution of the region's population and needs. In particular it is clearly recognized that the Tihama and the eastern part of the region are grossly underprovided. This uneveness of

provision is examined further in the case study area in chapter twelve.

An additional problem is the low grade of many of the centres so that they give inadequate care to the patients who visit them. Table 7.8 shows that 72 percent of the 214 primary health care centres in Asir are grade one, the lowest grade centre with few facilities. Only fifteen or 7 percent of the total are grade four. It follows that few offer more than basic care. Only 49 (23 percent) of them have dental facilities. Only 43 health centres (20 percent) have X-ray facilities and only 59 centres (28 percent) have laboratory facilities. Therefore, most health centres cannot offer diagnostic and treatment facilities, and serve as little more than first aid centres. But transfer to hospitals is often difficult for many who use these centres because of the large distances.

Table: 7.8
Primary health care centres by grade and facilities in Asir, 1986.

Type of Facilities	Grade 1	Grade 2	Grade 3	Grade 4	Total
No. Of PHCC	153	28	18	15	214
Health centre with dental	N.A	N.A	N.A	N.A	46
Health centre with X-ray	"	"	"	"	43
Health centre with laboratory	"	"	"	"	59

Source: Ministry of Health, Annual Health Report, 1986.

Because most of the centres are low grade their staffing is also limited. Table 7.9 shows the manpower by sex, nationality and specialization of Asir's health centres in 1986. There were only 272 general practitioners distributed between the 214 health centres giving an average of 1.3

doctors per centre. Only 28 of those doctors (10 percent) were female physicians. Apart from 41 dentists only four of the 272 doctors were specialists. In total the manpower in these 214 centres represented only 39 percent of all health manpower in Asir showing the predominant role still of hospitals.

With only a small staff not all the facilities in the primary health care centres were fully staffed. According to Ministry of Health information there were 46 dental clinics in Asir's health centres in 1986, but there were only 41 dentists so that five of these clinics were without dentists. Table 7.9 shows that the number of ancillary medical staff like nurses, pharmacy assistants, health inspectors, administrators, drivers and others attached to health centre services are also severely limited. Nurses are the largest category of manpower in the health centres with an average of 3.6 nurses per centre, but several centres lack a pharmacist. There were 152 pharmacy assistants so that in 62 health centres the physician, or one of the other medical staff, has to prepare medicines. There were even fewer health inspectors, statistical assistants, drivers and administrators to carry out the paper work and keep statistics.*

In spite of the limitation of the system of primary health care centres, they appear to be quite widely used. Between 1982 and 1986 there was a 70 percent increase in the number of visits made to primary health care centres in the region although during that period the number of health

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* Servants and other workers represent more than a quarter of the total health centre manpower and all of these are Saudis. The Saudi staff constitute about 42 percent of the total staff of primary health centres. 90 percent of them carry out unskilled jobs like clerks, drivers, servants and workers. Most of the key medical staff are expatriates.

Table: 7.9

The manpower of primary health care centres by type, sex and nationality in Asir, 1986.

Type of Staff	Saudi		Expatriate		Total
	M	F	M	F	Staff
General Practit.	-	-	244	28	272
Internal Disease Physicians	-	-	3	-	3
Pediatricians	-	-	1	-	1
Dentists	-	-	37	4	41
Nursing Staff	69	6	152	553	780
Pharmacy Assist.	5	-	144	3	152
Laboratory Assist.	1	-	47	4	52
X-ray Assistants	-	-	45	-	45
Dental Assistants	-	-	37	4	41
Statistical Assist.	8	-	-	-	8
Health Inspectors	9	-	60	-	69
Clerks	114	-	-	-	114
Drivers	177	-	-	-	177
Servants & Workers	414	179	-	-	593
TOTAL	797	185	770	596	2,348

Source: Ministry of Health, Annual Health Report, 1986.

centres doubled. During 1986, a total of 4,155,291 visits were made to health centres, equal to 70 percent of the total number of attendances at all health facilities in Asir region. This gives a monthly average attendance of about 1618 persons per centre. Adult males made up 37.2 percent of the total patients attending health centres in Asir in 1986, a relatively high proportion compared with other groups of the population. Adult females accounted for 30.4 percent of the visits, a low percentage considering that the female population outnumbered the male population in the region. Children under twelve years of age formed 32.4 percent of the total visitors, again a rather low proportion in a region where the population under twelve years of age constitutes more than 46 percent of the total population.

It is clear that major inequalities remain in the provision of health facilities across the region and their level of use. Government data does not allow a detailed analysis of these points which will be considered for one part of the region on the basis of the author's field investigation in chapter twelve.

7.2 THE SERVICE CENTRE NETWORK AND MUNICIPALITIES

So far these last two chapters have focussed on the provision of education and health services in Asir, two major areas of public service allocation. Decisions on where to allocate these services are largely taken centrally and they have to balance the need for a spread of services with the requirements to centralize specialist facilities. But government decision making also is involved with the development of service centres and the local government, or municipality, needs of these centres. Here again a balance is needed between providing these services widely yet not

spreading them too thinly.

With the rapid economic and social development in the Kingdom in the last fifteen years the identification and development of service centres have become an increasingly important element in the evolving infrastructure of the various parts of the country. Asir province is one of the fourteen administrative regions in the Kingdom, and is divided into 57 local administrative areas or subemirates, each with its own local emir. But these 57 areas do not necessarily represent good service catchment areas particularly as towns and some large villages are developing as centres for large areas around them. To help steer the development of a rational pattern of service centres, the Ministry of Municipal and Rural Affairs (MOMRA) devised a socio-economic development plan for the Southwest (1973-80), the main aims of which can be summarized as follows:

1) To enhance the efficiency with which the social and economic services are delivered to the people.
2) To promote the developmet of viable communities and to organize the people in the rural areas so that they can contribute to their own development.
3) To reduce the gap in living standards between urban and rural communities and thus to curb rural outmigration in so far as it is motivated by lack of public services in rural areas.

The plan designated 25 centres for Asir grouped as tertiary, secondary and potential secondary centres. These were largely selected on their existing service functions and catchment areas. They consisted of the two "tertiary" centres of Abha and Bishah, of which Abha is distinguished as a "growth pole" in view of its importance as the regional capital. The ten secondary centres included towns like Khamis Mushayt, Dhahran Aljanub, Alnimas, Muhayil, Sarat

Abidah and Sabt Alalayah. The thirteen potential secondary centres included small towns and larger villages such as Tathlith, Rijal Alma, Alharajah and Ben Hashbal. However, this suggested system of central places is vague and incomplete because it did not determine the existing size and functions of these potential centres, and did not consider if they were capable of growing to fulfil their allotted role. It also ignored a large number of villages in various parts of the region which might have been better fitted for these role, such as Bellasmar, Tanumah, Almajardah, Almadhah, Samakh and many others.

The problem of creating growth poles at several village centres is basic for Asir's development. Not only must the most suitable places be selected for development as service centres but the most suitable number is required. Being an essentially rural region, Asir has few existing urban centres which can naturally act as growth poles for the extension of public, municipal and private sector services. According to the 1974 census Asir region had only two urban places, Khamis Mushayt and Abha, with a population of more than 30,000 each. Apart from Bishah town with 14,040 inhabitants, there were only three other urban centres, but each had a population of less than 4,000. On this basis the six urban centres of Asir represented only 15 percent of the total provincial population in 1974 with the other 85 percent of the population enumerated in a total of 3567 smaller places (villages, farms and nomadic agglomerations). As development got underway in the region in the 1970s several large and well located villages began to form a second tier of service centres below that of the three main towns. Traditional market villages and local subemirate centres, like Alnimas, Sarat Abidah, Ahad Rufaydah, Tathlith, Sabt Alalayah and Rijal Alma began to develop

additional services and in some cases they grew more rapidly than places like Dhahran Aljanub, Muhayil and Almadhah which the census had picked out as small urban centres. It was this pattern of naturally evolving centres which the MOMRA plan largely elaborated on to devise its system of 25 growth centres. But this was not the only growth centre plan put forward.

Because of the rapid development occurring in Asir in recent years the High Committee for the Planning of Asir launched a comprehensive survey of the region in 1982 to provide basic information considered necessary for the future development of the region and to suggest a framework of service centres.* The final reports of this study which were presented to the Asir Emirate and the Ministry of Planning in March 1983 concluded that all of the existing services in Asir region were inadequate and were unevenly distributed across the region. It noted that the main urban centres and their surrounding villages were much better served with various services than the remote communities particularly in the Tihama and in the eastern part of the region. The study therefore established goals for the future development of the region which largely repeated the objectives of the MOMRA Plan for the Southwest region. These were:

1) To enhance the efficiency of local administration and the provision of social and economic services.

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* The Planning Committee under the Asir Governor had the the following members: the Vice Governor of Asir, the Deputy Minister For Town Planning, the Assistant Deputy Minister of Planning, The Director General of Municipal and Rural Affairs in Asir and the Director General of Development and Coordination of Services Department in Asir Emirate. The Survey was carried out in 1982 by a team from the Asir Emirate Office, the Ministry of Planning Regional Office, the General Directorate of Municipal and Rural Affairs and the headquarters of the Asir police.

2) To provide assistance to the rural population in raising their standards of living by developing the rural areas.

3) To achieve an equitable distribution of governmental services among the urban, rural and nomadic sectors of the region's population.

To achieve these objective the study proposed a reorganization of the spatial structure of the existing service centres in Asir region and suggested that no less than 178 villages should be classified as service centres at five levels on the basis of the range and capacity of the services provided, the number of population served and the future development of services in the region. The Asir region was also to be divided into nine subregions. The capital of each subregion would become a first order centre. These would include Abha, Khamis Mushayt, Muhayil, Alnimas, Bishah, Tathlith, Sarat Abidah, Sabt Alalayah and Dhahran Aljanub. A further 169 places would form lower order centres within these subregions. Table 7.10 shows the distribution of these centres among the nine subregions. It can be seen that the Muhayil subregion, with 39 centres, would have the largest number of the suggested service centres in the region, followed by the subregion of Khamis Mushayt with 28 centres, while Dhahran Aljanub would have the fewest centres. Fig. 7.2 shows the subregional division of Asir and the first and second order centres suggested in the plan. It is not possible to map the others service centres suggested by the plan because of the absence of data on their locations.

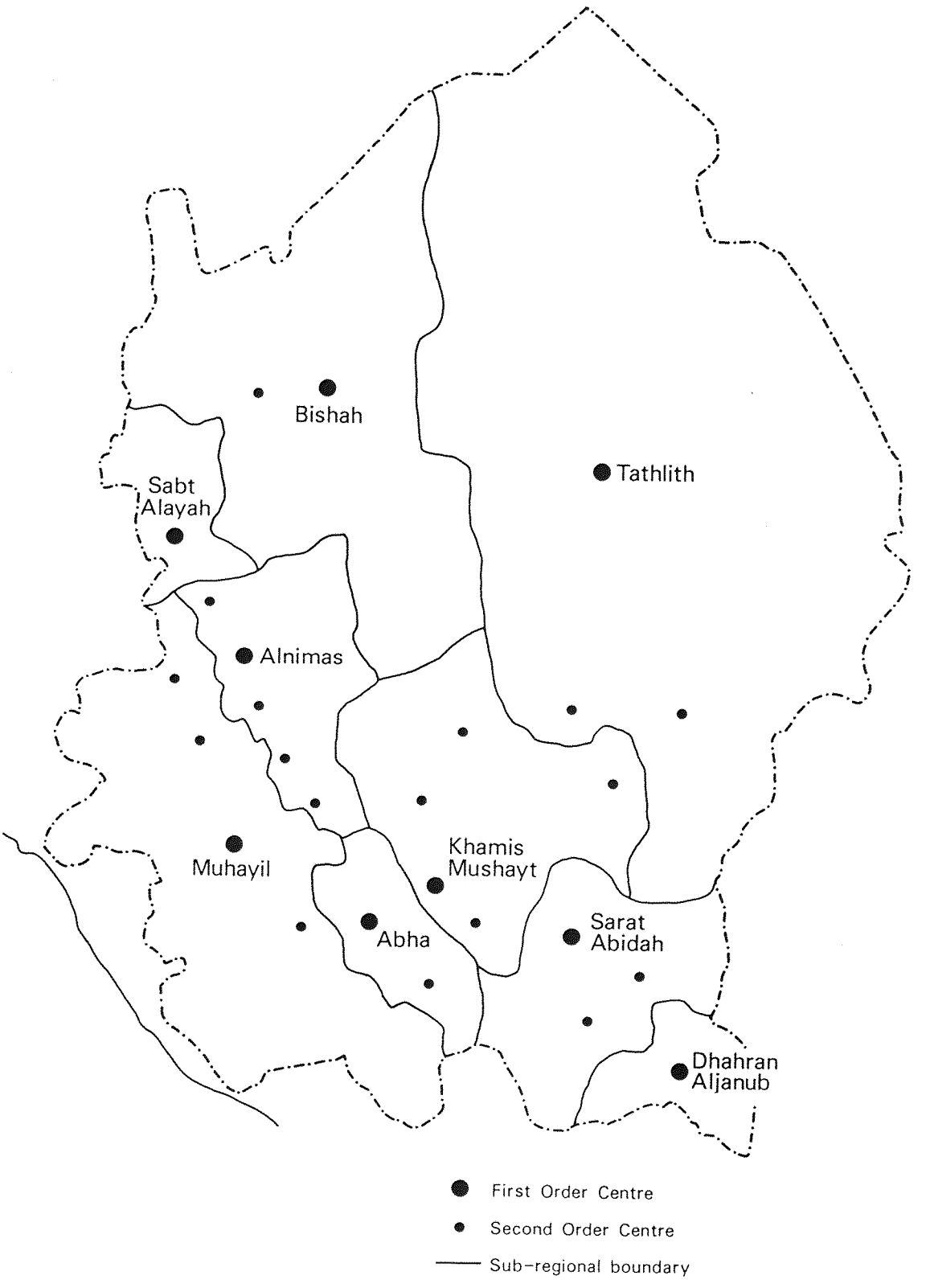
There are clear weaknesses in the Plan. For example, Table 7.10 shows that Muhayil would have all of the designated fifth order centres or "potential" centres, which were mainly designated to help develop selected nomadic

Table: 7.10

The distribution of service centres suggested by Asir Emirate Study, by Subregion, 1983.

Subregion	First order centre	Second order centre	Third order centre	Fourth order centre	Fifth order centre	Total
Abha	1	1	3	5	-	10
Khamis Mushayt	1	4	9	14	-	28
Muhayil	1	3	16	8	11	39
Alnimas	1	4	11	5	-	21
Bishah	1	1	9	7	-	18
Tathlith	1	2	8	6	-	17
Sarat Abidah	1	2	9	11	-	23
Sabt Alalayah	1	-	7	10	-	18
Dhahran Aljanub	1	-	3	-	-	4
TOTAL	9	17	75	66	11	178

Source: Asir Emirate Survey, 1983.



Source: Asir Emirate Study, 1983

Figure 7.2 Suggested subregional centres and second order centres in Asir Region, 1983

communities into service centres. However, many nomadic communities in other parts of the region, particularly in the Tihama of Sarat Abidah subregion, and in the eastern part of the region around Tathlith and Bishah, were to receive fewer designated centres and none in this category.

The designation of so many third, fourth and fifth level service centres under the Asir Emirate plan, was unrealistic to tackle the acute shortages of social and physical facilities of the region. The region could not support 178 service centres. Clearly what was needed was an emphasis on development in fewer well located and well populated centres, largely the 26 selected as first and second order centres. But it is not clear how villages in this suggested system of service centres were identified and under what critera they were classified. Nor is it clear what note was taken of the uneven distribution of these centres in the nine designated subregions.

It is worth noting that the Third development plan (1980-1985) designated only twelve service centres for Asir. These were Abha and Khamis Mushayt designated as national centres; the three regional centres of Bishah, Muhayil and Dhahran Aljanub, and seven district centres of Sarat Abidah, Tathlith, Rijal Alma, Alnimas, Almajardah, Sabt Alalayah and Bellasmar. This list includes all of the first order subregional centres selected in the Asir Emirate study together with three others designated by the Emirate plan as second order centres (Rijal Alma, Almajardah and Bellasmar). But twelve regional centres is too small a number for so large an area. In chapter thirteen the writer suggests the basis for the selection of regional centres in his case study area as a further contribution to this debate.

7.2.1 MUNICIPAL SERVICES

All of the subregional first order centres and five of the second order centres proposed in the Asir Emirate Plan now have been given municipality status in recognition of their central importance. Municipal areas consisting of many villages around each centre have been defined within which various local services will be provided from the centres. It seems sensible to examine the performance of these municipalities so far in beginning to extend municipal services across the region.

Abha municipality was created in 1958 when it was clear that it could support and benefit from municipal services. By 1970 municipality status had been granted to Khamis Mushayt, Bishah and Muhayil. Two more municipalities were recognized at Dhahran Aljanub and Ahad Rufaydah in the first half of the 1970s. During the second half of the 1970s, with an increased demand for municipal services and the determination of the government to develop other smaller centres, four municipalities were established around the centres of Sarat Abidah, Alnimas, Tanumah and Tathlith. When the MOMRA's Deputy Ministry For Rural Affairs introduced the "Village Cluster Policy" in 1976 village clusters were established in Sabt Alalayah in 1976 and in Almajardah in 1979. These were followed by two more village cluster municipalities based on Rijal Alma (1981) and Alharajah (1983).

It is difficult to make a distinction between an urban municipality and a village cluster municipality. MOMRA has established that certain facilities should be provided in urban places and larger villages deemed to be municiplalities. To accommodate the mainly village settlement character of a region like Asir, "village

clusters" have been set up to complement the urban municipality. But it is not entirely clear how an urban municipality and a village cluster are distinguished from each other and under what conditions a town or set of villages could qualify for the funding of municipal services. Nevertheless, the fourteen towns and village clusters in Asir which have been selected for municipal status are intended to provide a wide range of local services. These services include water supply; sewerage; public slaughter-houses, meat and vegetable markets; asphalting of local roads; refuse collection; public health and safety; public recreation; parks and toilets and the preparation of physical plans.

Fig. 7.3 shows the distribution of municipality centres and village clusters as defined in Asir in 1986. It can be seen that nine of them were situated in the main mountain areas with only five in the less populated Tihama and the eastern areas of the region.*

But to a large extent these muncipalities and village clusters exist only in name because many of the services are not being provided, at least not over the whole area of each municipality. Nor is it clear what the extent of each municipality is. This has resulted especially from a lack of funds, a shortage of skilled manpower and insufficient planning. Generally the municipalities have been provided with catchments far too large for them to serve. Table 7.11 shows the officially defined areas of the municipalities in Asir region. It can be seen that Abha, Khamis Mushayt and Bishah municipalities are easily the most populated with 75 percent of the total municipality populations defined as

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* All of these municipalities and village clusters are administered by the General Directorate of Municipal and Rural Affairs at Abha which was created in 1978 to supervise the municipality projects for MOMRA in Riyadh.

Table: 7.11

The catchment areas of the municipalities and village clusters in Asir region.

Municipalities and Village Clusters	Population of municipality centre	percent	No. of villages included in official catchment
Abha	60,000	27.9	-
Khamis Mushayt	70,000	32.5	60
Bishah	32,000	14.9	9
Ahad Rufaydah	7,500	3.5	5
Sarat Abidah	3,500	1.6	47
Dhahran Aljanub	10,000	4.6	42
Tanumah	1,331	0.6	42
Alnimas	12,000	5.6	24
Muhayil	6,000	2.8	40
Tathlith	2,500	1.2	22
Sabt Alalayah	5,500	2.6	25
Almajardah	2,500	1.2	200
Rijal Alma	2,000	0.9	-
Alharajah	450	0.2	-
TOTAL	215,281	19.8	516

Source: Compiled from report published by the General Directorate of Municipal and Rural Affairs in Asir, 1987.

Source: compiled by the author

Figure 7.3 Places selected as municipalities and village clusters in Asir Region, 1986

living in the towns at the centre of the municipality. In some ways these are the more successful municipalities because more of their population is urban or lives close to the town. The other municipality centres are much smaller with populations ranging from 12,000 in Alnimas and 10,000 in Dhahran Aljanub to only 1,331 in Tanumah and 450 in a village cluster like Alharajah. Originally the municipalities were supposed to be based on urban centres whereas the village clusters were based on large villages. However, because of the large number of villages all over Asir and the relatively small size of the urban centres, even the urban based municipalities largely include villages in their outline area with all the problems of extending municipal services to those villages.

The extent at these catchments is unclear. The number of villages actually intended to benefit from municipal services is 516, or about 13 percent of the total number of villages in the region. But official catchments have not been defined for three municipalities. These villages are those considered by ministerial decrees to be close enough to main municipal centres to claim municipal facilities. On the other hand the General Directorate of Municipal and Rural Affairs in Asir claims that the catchment of the municipalities and village clusters in Asir really takes in all of the 4,007 villages in the region.

Even if the municipal areas are restricted to 516 villages the extent to which services extend into those villages is even more limited. Most municipal development has so far been concentrated in the main municipality centres of Abha and Khamis Mushayt. This reflects the shortage of funding nationally for municipal development. According to the allocation of funds by MOMRA to all municipalities in the Kingdom, the Southern region of the

country which includes Asir, received only about SR 94 million (6.9 percent) between 1965 and 1973 of a total of SR 1,400 million expended on municipal services in the Kingdom (Al-Rawaf, 1980). Since the Southern region contain 21 percent of the Kingdom's population and 16 percent of its urban population, it can be seen that its municipal development has been underfunded.

Even less money has been funded for the provision of municipal services in village clusters. Only SR 54 million or 1.8 percent of the total allocation for municipal projects in Asir between 1979-85 were allocated to them. In all cases these were for asphalting and lighting of roads and these improvements were mostly confined to the main village centres.

The collection, transportation and disposal of domestic solid waste and street cleaning are another responsibility of the municipalities through their Enviromental Health Departments. Table 7.12 lists the total expenditures and labour force for waste collection by municipalities in Asir during the fiscal year of 1984/85. Again it is clear that more is spent on this municipal service in the large urban based municipalities. Of the SR 52 million spent on refuse collection in 1984/85, about 53 was spent by the municipalities of Abha and Khamis Mushayt. These two towns had more than half of the 1593 workers employed in all municipalities for this work. Abha had 31 percent of the total cash allocation and 30 percent of the total manpower of all Asir municipalities in this field. At the other end of the scale Almajardah's village cluster received 3 percent of the total expenditures on refuse management and 3 percent of the labour force to serve an official catchment which contains no less than 200 villages. Clearly this is impossible.

Table: 7.12

Budget allocation and manpower for refuse collection in Asir, 1984/85.

Municipalities	Expenditures SR	%	Labour	%
Abha	16,228,000	31.3	480	30.1
Khamis Mushayt	10,975,000	21.2	338	21.2
Bishah	4,381,390	8.4	148	9.3
Ahad Rufaydah	2,162,111	4.2	61	3.8
Sarat Abidah	1,778,000	3.4	56	3.5
Dhahran Aljanub	2,191,570	4.2	62	3.9
Tanumah	1,428,214	2.8	43	2.7
Alnimas	2,862,727	5.5	94	5.9
Muhayil	2,548,667	4.9	80	5.0
Tathlith	1,661,688	3.2	55	3.5
Sabt Alalayah	2,119,750	4.1	62	3.9
Almajardah	1,501,238	2.9	49	3.1
Rijal Alma	1,242,180	2.4	40	2.5
Alharajah	790,710	1.5	25	1.6
TOTAL	51,871,245	100.0	1593	100.0

Source: The General Directorate of Municipal and Rural Affairs in Asir, 1987.

The Environmental Health Department of each municipality also has responsibilities for protecting public health and safety, including food inspection. Again one finds that the municipalities of Abha and Khamis Mushayt dominate. In 1986, 62 percent of all food inspections in Asir were carried out in these two municipalities.*

The general lack of funds and skilled manpower has made it impossible for municipalities to provide more than a minimum level of municipal services and they have been unable to extend these services to many of the settlements within their areas. Table 7.13 shows the level of municipal expenditure and the number of workers employed by each municipality in Asir in 1984/85. Excluding project funds the budgets of Asir's municipalities to cover salaries, allowances and normal operations and maintenance came to SR 212 million in that year. It has already been noted that the refuse collection services in that year cost SR 52 million, or about 25 percent of the total current budgets.**

The total recurrent allocations for Asir's municipalities in 1984/85 at SR 212 million was more than double that for 1977/78 but was only equal to 4.3 percent of the total government recurrent allocation for municipal and

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* Other activities of the Environmental Health Departments of municipalities include veterinary and hygiene control in markets, slaughter-houses, food shops and restaurants. A total of 1,009,033 animals were slaughtered in the region between 1982 and 1986 under the supervision of the sanitary officers in the municipalities of Asir. In the area of retail food hygiene the sanitary sections of Asir's municipalities carried out a total of 15,729 inspections of food establishments during 1986 and considerable quantities of meat, canned and other foods were confiscated because they were judged unfit for human comsumption. A total of 73,730 kg of meat and fish, 708,000 cans, 2,460 kg of flour and 655,000 kg of fruit and vegetables were confiscated in 1986.

** There is no information about the size of project allocations in that fiscal year but they probably considerably exceeded the general level of expenditure for salaries and maintenance.

Table: 7.13

Budget allocations and manpower for the municipalities of Asir, 1984/85. (SR million).

Municipalities	Salaries and allowances	Operation and maintenance	Total allocation	%	Employees excluding refuse empl.	%
Abha	29.3	37.8	67.1	31.7	178	21.8
Khamis Mushayt	22.3	18.6	40.9	19.3	120	14.7
Bishah	11.5	8.4	19.9	9.4	87	10.6
Ahad Rufaydah	5.9	3.5	9.4	4.4	58	7.1
Sarat Abidah	4.5	2.7	7.2	3.4	40	4.9
Dhaharn Aljanub	6.3	2.9	9.2	4.3	51	6.9
Tanumah	4.5	2.9	7.4	3.5	45	5.5
Alnimas	6.1	3.8	9.9	4.7	57	7.0
Muhayil	6.0	4.4	10.4	4.9	35	4.3
Tathlith	4.1	2.5	6.6	3.1	35	4.3
Sabt Alalayah	6.4	2.8	9.2	4.3	54	6.6
Almajardah	3.8	2.5	6.3	3.0	28	3.4
Rijal Alma	2.6	1.9	4.5	2.1	15	1.8
Alharajah	1.8	2.0	3.8	1.8	15	1.8
TOTAL	115.1	96.7	211.8	100.0	818	100.0

Source: The General Directorate of Municipal and Rural Affairs in Asir, 1987.

rural affairs in the Kingdom in that year. It was clearly insufficient to meet the large demands for municipal services in the region. The municipalities of Abha and Khamis Mushayt accounted for half of the budget, while the majority of municipalities have between 2 to 5 percent of the total allocations. This allowed the fourteen municipalities to employ 818 employees excluding the refuse workers. The majority of those employees are unskilled staff generally doing very basic jobs.

Project funds were rather larger than recurrent funds but still inadequate for needs. Table 7.14 shows the expenditure of the municipalities on projects over a seven year period of 1979 to 1985. It can be seen that the total allocation for municipal projects in Asir region in this period was nearly SR 3,000 million. But this only equalled 2.8 percent of the total government allocation for municipal projects in the Kingdom in that period. With 9 percent of the municipalities in the Kingdom, this indicates the low level of municipal provision that exist in Asir compared with other region. The Table again shows the dominant position of the municipalities of Abha and Khamis Mushayt which accounted for about 85 percent of the total expenditures on municipal projects carried out in Asir in the seven year period even though they had 60 percent of the population of Asir's municipality centres.

Asphalting of roads, paving of streets and the provision of street lighting were common improvement project activities of all the municipalities, with 15.7 percent of those funds spent on these type of projects. About 33 percent of the total allocation of these projects was for Abha municipality, 21 percent for Khamis Mushayt and 8 percent for Bishah. All of the smallest municipalities and village clusters spent all of their funds on these type of

projects. These roads often have a short life, however, because most were laid without proper foundation or drainage systems so that they often wash out in the rainy season. This is a particular problem with roads laid in some of the smallest municipalities with least funds. Nevertheless local asphalt roads have greatly improved communication between municipal and village cluster centres and outlying villages and those villages at some distance from the municipal centres have benefited most.

Other major activities of several of the municipalities, especially the large ones, have included the construction of public buildings, vegetable and meat markets, slaughter houses and cemetery fencing. A total of SR 101 million was expended on these types of projects between 1979 and 1985. Administrative buildings were erected for eight of the municipalities costing between two to five SR million each.* Slaughter houses were constructed in seven municipalities at a total cost of SR 50.6 million.** Other municipal construction included the erection of vegetable and meat markets. Abha's vegetable and meat market has been rebuilt at a cost of more than SR 21 million. Also a large number of cemeteries have been fenced in the municipalities centres and in hundreds of surrounding villages.

The largest single amount of this project money was spent on compensation to landowners for land taken to build government buildings, to lay new streets and for other purposes. Most of the evolving urban centres in the region,

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* These were Abha, Khamis Mushayt, Sarat Abidah, Ahad Rufaydah, Alnimas, Tanumah, Dhahran Aljanub and Sabt Alalayah village cluster.

** These were Abha, Bishah, Dhahran Aljanub, Muhayil, Alnimas, Tanumah and Sarat Abidah. The Abha's slaughter house, constructed jointly for the towns of Abha, Khamis Mushayt and Ahad Rufaydah, is a much larger and more automated one and cost more than SR 41 million.

Table 7.14

Municipality expenditures by type of projects in Asir, 1979-85 (SR million)

Municipalities and Village Clust.	Asph. pav. & light.	%	Erect. of build.	%	Compen-sation	%	Publ. util.	%	Erect. of brid.	%	Stud.	%	Total	%
Abha	151.9	11.7	27.2	2.1	515.6	39.8	566.8	43.8	12.1	0.9	21.1	1.6	1,294.7	43.5
Khamis Mushayt	99.4	8.0	21.8	1.8	570.0	46.1	516.3	41.7	12.7	1.0	16.0	1.4	1,236.9	41.5
Bishah	39.4	40.4	8.6	8.8	49.6	50.6	-	-	-	-	-	-	97.6	3.3
Ahad Rufaydah	21.9	39.0	5.2	9.3	29.0	51.7	-	-	-	-	-	-	56.1	1.9
Sarat Abidah	13.0	54.4	10.9	45.6	-	-	-	-	-	-	-	-	23.9	0.8
Dhahran Aljan.	21.9	43.8	7.5	15.0	18.0	36.0	-	-	2.6	5.2	-	-	50.0	1.7
Tanumah	15.5	41.0	8.3	22.0	14.0	37.0	-	-	-	-	-	-	37.8	1.3
Alnimas	18.4	32.5	5.9	10.4	32.3	27.1	-	-	-	-	-	-	56.6	1.9
Muhayil	21.3	35.5	5.6	9.3	29.2	48.7	3.9	6.5	-	-	-	-	60.0	2.0
Tathlith	10.0	100.0	-	-	-	-	-	-	-	-	-	-	10.0	0.3
Sabt Alalayah	17.0	100.0	-	-	-	-	-	-	-	-	-	-	17.0	0.6
Almajardah	17.0	100.0	-	-	-	-	-	-	-	-	-	-	17.0	0.6
Rijal Alma	10.0	100.0	-	-	-	-	-	-	-	-	-	-	10.0	0.3
Alharajah	10.0	100.0	-	-	-	-	-	-	-	-	-	-	10.0	0.3
TOTAL	466.7	15.7	101.0	3.4	1,257.7	42.2	1,089.0	36.5	27.4	0.9	37.8	1.3	2,977.6	100.0

Source: The General Directorate of Municipal and Rural Affairs in Asir, 1987.

including Abha and Khamis Mushayt, were only small clusters of farm villages scattered around a main market place a few years ago. The expansion of the government services and buildings in these centres, and general urban development, has involved considerable land acquisition by government ministries, either for government building or for street development. For instance the populations of Khamis Mushayt and Abha which were 18,000 and 17,500 in 1962 had grown 168 percent and 74 percent respectively by 1974 and have expanded much more since then. At the same time the population of the smaller urban centres has increased rapidly in recent years requiring the acquisition of land by the municipalities for their development. Consequently, 42 percent of total municipal project expenditure, or SR 1 1/4 billion for the years between 1979 and 1985 was directed to land purchases and compensation for property taken from private individuals. What is more, this cost was borne by only the eight larger municipalities. 86 percent of the total was spent in the cities of Abha and Khamis Mushayt alone.

Public utility projects, including water supply, sewage and drainage disposal systems were the second largest item of municipal expenditure in the period of years referred to in Table 7.14, even though only three municipalities were involved in these projects. Much of this expenditure in Abha and Khamis Mushayt was for a water supply network which is still under construction. The first stage of these projects costing more than SR 270 million is expected to be completed in early 1989.* Until the network is complete water is

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* Water is to be supplied to the network from a small purification plant at the Abha dam with a capacity of about 1,700 cubic meters per a day. A smaller water network was completed for part of the inner town of Muhayil in 1985 along with a small reservoir costing SR 3.5 million.

supplied to households by a tanker delivery service. A total of 38,850 tanker deliveries were made to household in Abha in 1986. Some of Abha's houses are also supplied from 30 private wells, while Khamis Mushayt is supplied by six private wells. Other municipalities in Asir supply water to households by tankers from government-owned wells or from private wells. For instance, the town of Bishah is supplied from one government and seven private wells, while in the municipality of Tanumah there are no less than 418 private wells and one government well.

The other major expenditure on public utilities during the period 1979-1985 in Abha and Khamis Mushayt was on sewage provision. A sewerage and drainage network for Abha town was commenced in Abha in 1979 and completed in 1984 at a cost of SR 296 million. This provided connections to 3,469 dwellings or about 40 percent of those in the urban area. A sewerage and drainage system was completed for part of Khamis Mushayt city in 1982. This connected up 4,646 houses at a total cost of more than SR 305 million. But most houses in both towns still have percolation pits for sewage and waste water so that considerably more expenditure will be needed to complete the system. No sewerage and drainage systems have been established in any of the other towns or municipalities in Asir. Sewage disposal there still consists of cesspits with most of the effluent soaking into the ground and the overflow being pumped out by the septic tankers run by the municipalities.

It is clear that major gaps remain in the development of the service centres and the municipal facilities in Asir. Despite the large efforts and investments involved in developing basic municipal infrastructure, the benefits of these have not yet expanded far beyond the main municipality centres of Abha, Khamis Mushayt and Bishah. Municipal

facilities in rural area are still inadequate and only a small percentage of Asir's villages are included in the catchment areas of the fourteen municipalities and village clusters. But many of these villages have so far not received even rudimentary services.

PART THREE

CHAPTER EIGHT

BASIC INFORMATION ON THE SARAT ABIDAH SUBREGION

8.1 TOPOGRAPHY

The area of the Sarat Abidah subregion, hereafter called the subregion or the study area, mainly consists of two topographical zones, the mountain ranges and the Tihama zone, which are illustrated in Fig. 8.1. They are separated by the escarpment on the western edge of the mountains, which here trends more east-west than north-south. The next sections briefly outline the physical features of the study area.

8.1.1 THE MOUNTAIN RANGES

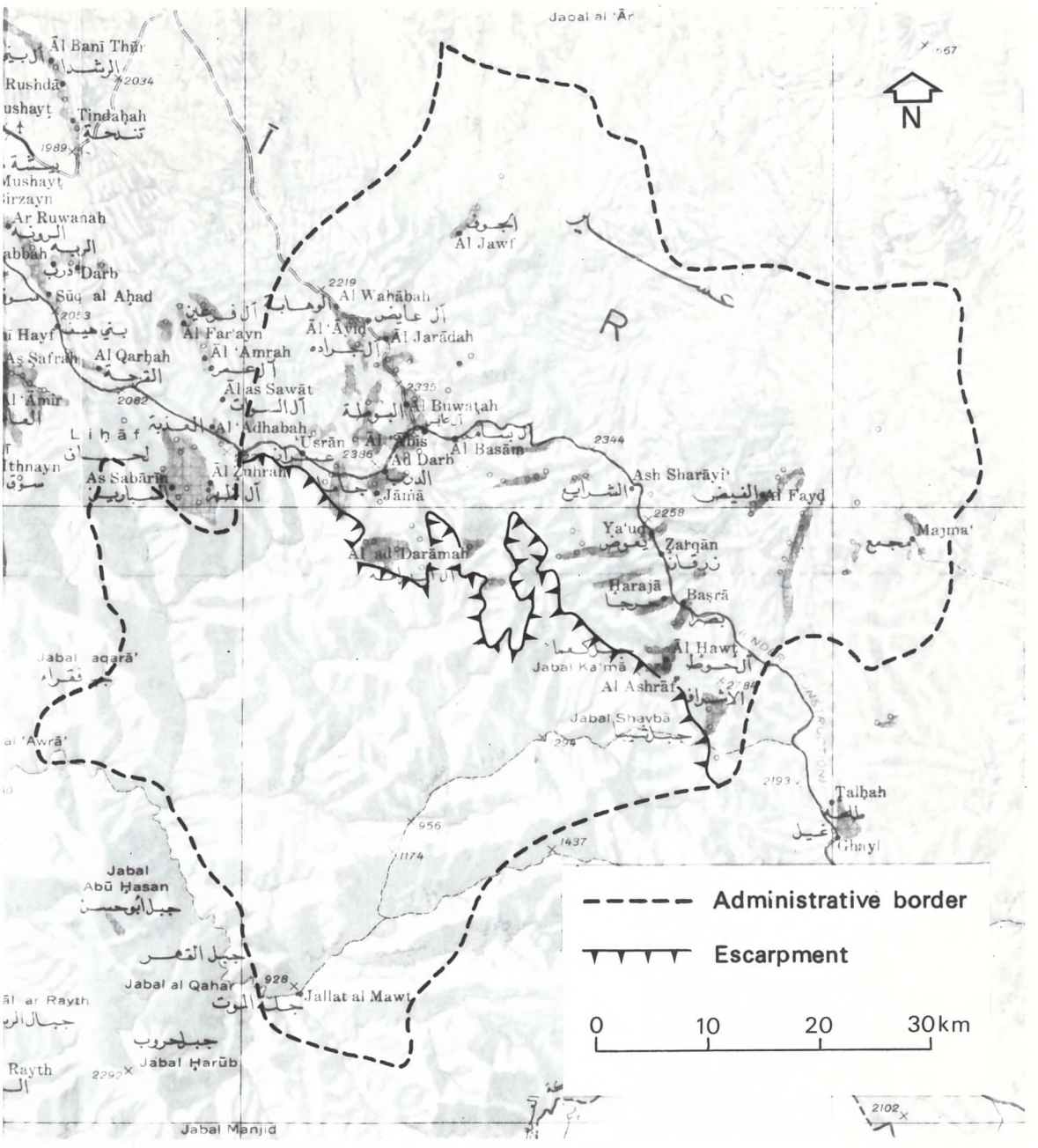
As mentioned previously, the escarpment line which forms the western edge of the mountains, stretches across the Asir region from Sabt Alalyah in the north to Dharan Aljanub in the south. In the study area altitudes in the mountains range between 2,000 and 3,000 metres. Various hard rocks including massive olivine, vesicular basalt, gray granitic rock with quartz monzonite and quartz diorite are found in the highlands. Extinct volcanic lava cones and extensive lava flows are scattered across the mountain zone, particularly on the northern and eastern flanks. In some areas village settlement is confined to narrow valleys within the mountains, but closer to the escarpment, and especially around Sarat Abidah town, there are a series of extensive basins of flatter and less rocky land. These provided the basis for much more farmland and a wide scatter of villages. In fact the mountain zone forms the backbone and the main zone of settlement in the study area. Because

of its importance it has acquired several local names such as Alsarat, Algam and Almajaz, all meaning the highland. It will be referred to here simply as the mountain zone.

The escarpment face falls precipitously often from about 3,000 metres above sea level towards the hilly Tihama. Wadis cut deeply into the escarpment face, giving the water courses a steep, rocky V-shape, such as Wadi Alardayn, Wadi Amas and Wadi Alhwbeyal (Fig. 8.2). The northeastern slopes of the mountains in contrast are more gentle producing a series of green fertile wadis, which allow for settlement along them and between the hills. The main wadis flowing from the escarpment towards the northeast are Wadi Al Jwof, Alfayed, Khadar, Alharyegah, Alqasab, Yawad, Alarqayn, Anam, Sarwm and Wadi Almawyn (Fig.8.2). But these flanks of the mountains are often drier than areas closer to the escarpment because of the rain shadow effect.

8.1.2 THE TIHAMA

The Tihama is the common name used for the area of plain, hill land and isolated high mountains west of the escarpment throughout Asir, Hijaz and Yemen. It is a much less elevated area than the mountain zone. It is mainly formed of Tertiary and older Permian rocks covered in places with alluvium, sand and gravel. The areas of greatest relief in the Tihama are generally near the escarpment at the edge of the main mountain zone where wadis have cut deep ravines. There are also many ridges parallel to the escarpment. In the north near the escarpment these ridges reach heights around 1,500 and 2,000 metres, but further south, around Wadi Alhayah, they are only 1,000 to 1,200 meters high. The drainage which flows from the escarpment has narrow rocky gorges like Wadi Raha, Thabah, Athrab, Baysh, Alatf, Alaynah



Source: Map of Asir Quadrangle.
U.S.Geological Survey/Arabian American Oil Co. 1968

Figure 8.1 A topographical map of Sarat Abidah subregion

and Wadi Allijah (Fig.8.2). The intense dissection makes much of the land unsuitable for human settlement and agricultural activity.

Extensive faulting in different directions and the very active erosion have led to the creation of many isolated peaks of granitic intrusions in front of the escarpment in the hilly Tihama. Several of these reach heights of more than 1,800 metres. In the south near Wadi Alhayah are Jabal Um Sharag (1860 m) and Jabal Shaqrq (1950 m). Further to the north-east, are Jabal Algwal (2,430 m) and Jabal Maswh (2,370 m). Further from the escarpment the Tihama takes on a less dissected appearance with more extensive basins and flatter areas between isolated hills and mountains. Here more land use is possible but, because of the dry climate, most of it is based on nomadism with only small patches of irrigated cultivation beside the wadis.

8.2 CLIMATE AND WATER RESOURCES

In general the climate of the study area, particularly of the mountains, is relatively cool, humid and pleasant and resembles that of the Abha area for which data was given in chapter four. Climate data on the Sarat Abidah area is very restricted. Even data on the basic elements of the climate is lacking because so few records have been kept. Nevertheless, the impact of climatic condition on various aspects of human activities is obvious, so that attention is given here to the most important elements of climate to affect human activity, namely precipitation and air temperature.

8.2.1 AIR TEMPERATURE AND PRECIPITATION

The only data available on air temperatures in the study area is from one station located at Sarat Abidah in the mountain area. There are no records for the Tihama. Table 8.1 shows the monthly mean air temperatures for Sarat Abidah station for the only three years for which the data was available from the Ministry of Agriculture (Hydrological Department). It can be seen that in the three years of records Sarat Abidah station recorded its highest temperatures in July, reaching a mean of about 24 °C. But generally summer temperatures are pleasantly warm. Lowest mean temperatures are recorded in December, January and February but these are still a mild 12 °C. No idea of the distribution of air temperature across the study area can be obtained from this limited data. Nevertheless, the figures reflect the important influence of altitude. Sarat Abidah at an elevation of 2,400 metres has an annual mean of about 18 °C. The Tihama area with an altitude generalty less than 1,600 metres must have higher temperatures especialy in the summer season.

The weather can vary quite markedly from day to day because the study area is located in a transitional zone invaded by various air masses at different times of the year. Both this and the area's elevation have also affected the pattern of rainfall.

Table 8.2, shows the seasonal average of rainfall receipt at three stations, namely Sarat Abidah and Alharajah which are located near the escarpment in the mountain area, and Alarquayn in the northeast. In fact, the escarpment face is the wettest part of the area as a result of its elevation and position facing into the south-westerly winds. On the other hand rains on the eastern slopes are much less because

Table: 8.1

Monthly average air temperature (℃) in the Subregion, 1982-1984.

Station: Sarat Abidah

Elevation: 2,400 m

Months	Years		
	1982	1983	1984
January	12.9	12.0	11.7
February	12.2	12.0	13.6
March	15.8	15.2	16.2
April	17.0	17.2	18.9
May	20.5	20.8	21.0
June	22.1	22.2	21.8
July	22.3	24.6	23.0
August	21.9	23.7	no data
September	21.6	22.5	19.9
October	18.0	18.7	17.3
November	13.2	14.9	14.6
December	12.2	12.1	14.6
Annual Average	17.5	18.0	17.5

Source: Ministry of Agriculture, Dept. of Hydrology.

they lie in the shadow of the mountain peaks but there are no rainfall records for these areas. Nor are there rainfall data for the Tihama area, so that it is impossible to detail the rainfall pattern for the whole study area. These records suggest that the annual average receipt of rain is lower than in other parts of Asir at the same elevation. For instance, Sarat Abidah station received 282 mm of rain in 1983, whereas Billasmar also at 2,400 metres, but much further north, received 575 mm in the same year. This lower rainfall may result from two factors. First, the mountains in the subregion are further from the Red Sea than the mountain areas to the north. Secondly, the moist south-westerly winds which provide the rain when directed into the Red Sea trough, tend to give up more of their moisture on the high isolated mountains of the parts of the Tihama in Jizan province like Jabal Fayfa (2,200 m), Jabal Alhashr (2,000 m) and Jabal Harub (2,240 m). They therefore bring less rain inland to Sarat Abidah area.

Spring and winter are the period of greater rainfall. From Table 8.2 it appears that winter rains at Sarat Abidah station are greater than in other seasons although it is difficult to believe that a different pattern would be found at Alharajah a few kilometres to the southeast and Alarqayn to the north where the spring is shown to be the wettest period. It must be remembered that rainfall records have only been kept for a very few years and that rainfall amounts can vary greatly from year to year, so that it is not yet possible to detail the seasonal pattern in each location. Summer and autumn rains tend to be scarce since the convergence zone, into which the south-westerly winds are blowing, is retreating southwards away from the area.

Variability of rains could be greater in the area than in other mountain areas in Asir. For instance Sarat Abidah

Table: 8.2

Seasonal average distribution of rainfall in the Subregion (mm).

Station	Elevat. (m)	Winter	%	Spring	%	Summer	%	Autumn	%	Annual Average
Sarat Abidah (1982–84)	2,400	90	48	60	32	27	14	12	6	189
Alharajah (1975-84)	2,350	45	21	118	56	33	16	14	7	210
Alarquayn (1974-84)	2,060	6	8	51	72	10	14	4	6	71

Source: Ministry of Agriculture

Dept. of Hydrology

station received 282 mm of rains in 1982, but in 1984 it received just 63 mm. Alharajah received 386 mm in 1975 and only 31 mm in 1984. This variability of rainfall is reflected not only in the limited density of natural vegetation in the area, but in the adjustments by farmers and pastoralists who depend on rainfall rather than groundwater for their crops and pasture.

8.2.2 WATER RESOURCES

No records exist of runoff and wadi flows in the area. With no data of this type available, it is difficult to get more than a superficial overview of the pattern of water resources. Nevertheless, two major sources of water can be identified, surface runoff water generally only available for a few days after rainfall, and groundwater. The difference in topography between the two slopes of the mountain area affects the surface water flow and its possible capture. On the southwest side many short wadis flow from the escarpment to the Tihama area. Runoff is rapid after precipitaion so that the wadis here are dry most of the time. Slopes are very steep, and water flows in very narrow gorges, giving few favourable sites for its impoundment. However, the lower parts of these wadi basins in the Tihama offer more scope for water resources. Because the lower wadis are fed by many tributaries surface water is found almost all the time in these wadis. They offer better sites for the Tihama pastoralists, therefore.

The drainage systems which flow from the mountains towards the northeast follow gentler slopes and form larger wadis. Because they command larger catchments these wadis contain water for longer periods. These make possible terraced farming on the slopes close to the wadis with

farmers using the runoff water to irrigate their farms. Various techniques have been used to capture this wadi runoff, mainly involving farmers and villagers damming a wadi at appropriate points. Some wadi channels are confined by walls, or levees, to allow farmers to gain more irrigable wadi floor. In recent years a few small modern dams have also been established by the Ministry of Agriculture and Water Resources (Fig. 8.2), to supply water for the local populations and for agricultural activities. It can be noticed in Fig. 8.2 that none of these dams are on wadis flowing into the Tihama.

The second source of water is the groundwater, but this is not available in large quantities in the area because so much of the rainfall is lost in runoff or by evaporation, and because few of the local rocks are suitable aquifers. The distribution of groundwater is closely related to the distribution of basalt rocks where they outcrop in wadis beds in the mountains area. Other weathered rock meterials also provide shallow aquifers. Springs are locally important. Wells can be dug into these shallow aquifers. Every village in the area has between ten and 40 wells. The water derived from these wells is used for domestic purposes as well as for irrigation. A large number of open hand dug wells of four to eight metres in diameter and some eight to 25 metres in depth are found in the area.

In fact, the groundwater is the only permanent source of water for villagers in most of the study area, but it is hardly sufficient to meet domestic requirements and certainly cannot meet all farming needs. Well levels can be greatly lowered in long periods of drought because they depend on runoff recharge.

With recurrent water shortages, it is essential to develop other sources of water to meet the future demands

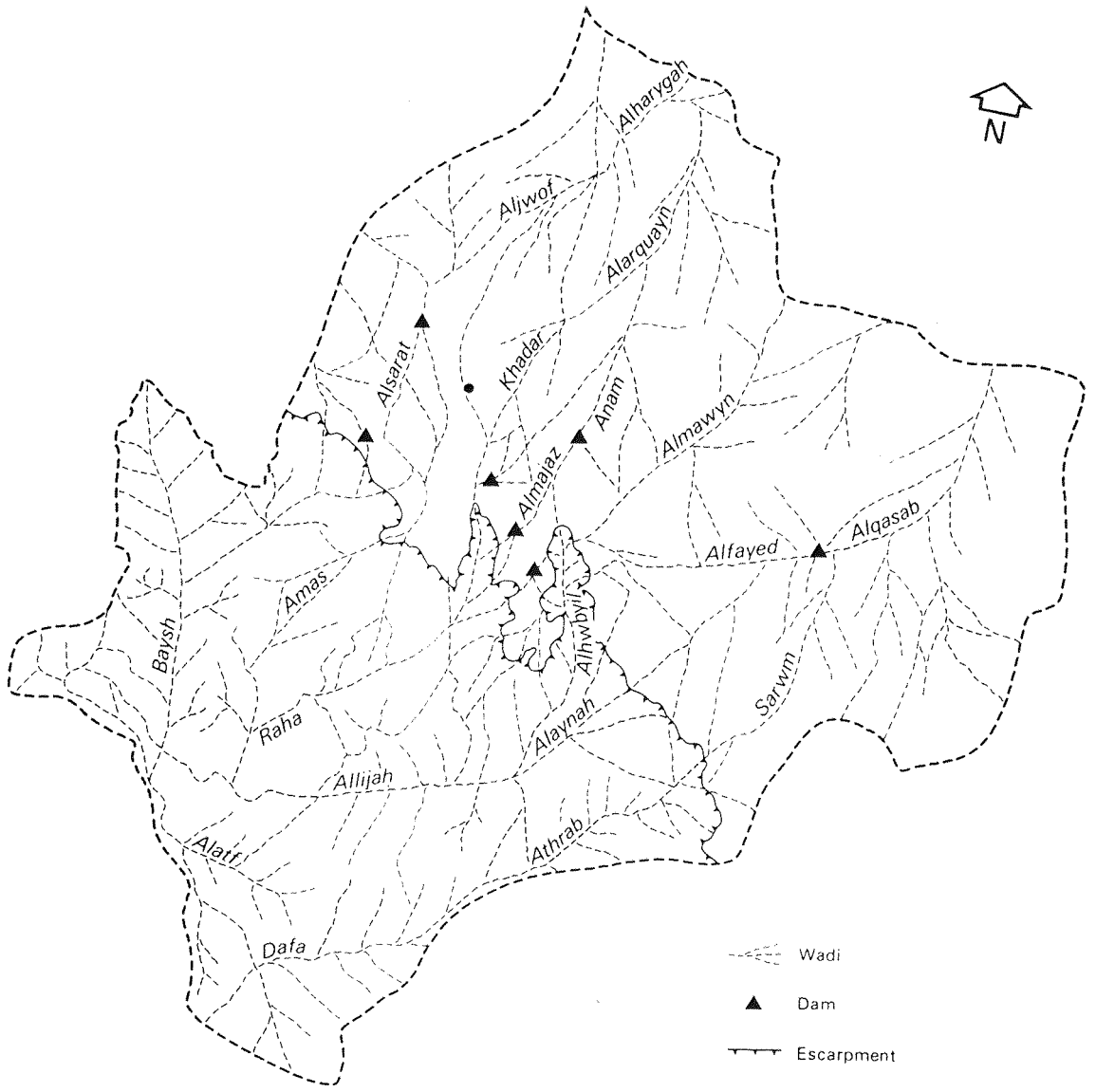


Figure 8.2 The drainage systems of the subregion

resulting from expanded economic activity in the study area. The most suitable option is to build more small dams especially to capture more of the large quantities of runoff water which flows to the Red Sea or to the Empty Quarter without benefit. Other dams could increase recharge to the wells. There are no plans to pipe water from other parts of Asir into the area.

8.3 THE POPULATION

8.3.1 POPULATION SIZE AND COMPOSITION

It has been noted in chapter four that there is a paucity of reliable population statistics for Asir region as well as for the whole country. The most recent national census taken in 1974 enumerated population by age, sex, literacy and occupation, but it did not provide data on fertility, mortality, natural increase and migration. Furthermore, the census was taken on the basis of subemirates which depended on traditional divisions whose boundaries have since changed. Nevertheless, the census gave the population of the study area as about 54,000. This equalled about 8 per cent of Asir's population.

The population of the area has clearly been expanding for several decades as seen in the growth of villages as well as in the one estimate for an earlier part of the century. The estimation of the area's population, made by Cornwallis in 1916, gave its population as 21,000 persons, but this could be an overestimate. Cornwallis' estimation was based on the numbers of fighting men but paramount sheikhs of the tribes probably overestimated the numbers in their tribes for prestige purposes. Cornwallis estimated 62 percent to be nomad and 38 percent rural.

A decade after the 1974 census had shown that 53,930 lived in the area, the Asir Emirate in 1983 gave the subregion's population as 100,198, an 85.6 per cent increase on the 1974 census figures. 73 percent of this population was classed as rural. Then a year after the Asir Emirate study, the Sogreah Consultancy Company, in a socio-economic survey of the the Kingdom's villages for the Ministry of Municipal and Rural Affairs, estimated the village sector of the area's population at 51,147. This figure excluded the nomad population and is clearly based on an incomplete count which may not have included the population of Sarat Abidah town itself.

Table 8.3 shows these various estimations alongside the 1974 census figure. The estimate in the Asir Emirate study is probably the most accurate recent figure because it counted the population in every village in the area. It is in fact now the basic figure used officially for the administration of the area.

Table: 8.3
Estimations of the Subregion's population.

Estimator	Year	Total population	Rural	Nomad
Cornwallis	1916	21,000	13,500	7,500
National Census	1974	53,930	29,485	24,445
Asir Emirate	1983	100,198	73,488	23,250
Sogreah*	1984	–	51,147	–

* Excluding nomad and urban population.

A further problem in comparing these estimates is that they were often taken on the basis of different administrative units within the study area. The official boundaries of the adminstrative units in Sarat Abidah area

changed between the 1974 census and the 1983 estimation. The census divided the subregion into three traditional subemirates of Sarat Abidah, Aljawwah and Alfarashah. In 1983 these were replaced by six subemirates as a result of the expansion of administrative services in the area and the growth of the population over the previous ten years. Fig. 8.3 shows the six subemirates now currently used in the subregion with their subemirate centres. Before the 1983 reform of the subemirate system in the subregion, Sarat Abidah subemirate included the subemirate of Alarquayn and small parts of Alharajah subemirate, while the other parts of Alharajah and Alfayed subemirates were included with the subemirate of Dhahran Aljanub. Hence the subregion consisted of only Sarat Abidah, Alfarashah and Aljawwah subemirates before 1983.

The 1974 census also only classified the population into two broad categories, rural and nomad, and one cannot be sure that the same definition of a nomad was used in both counts. There was no urban population counted in the area. In 1974 the subemirate centre, Sarat Abidah, only had 963 inhabitants and was still counted as rural. The rural population numbered about 29,500 or about 55 percent of the total population, and the nomadic population formed the other 45 percent. By 1983 the rural population had expanded to form 73 percent of the population because its numbers had grown much faster than the nomadic population. Sarat Abidah town had also grown to be classed as urban population.

The author has used the 1974 and 1983 population data and his knowledge of the admininstrative units they are based on to attempt to show this differential growth of population across the area (Table 8.4). It is clear that the mountain area was the more populated area and is dominated by a largely rural population. This made up 77 percent of

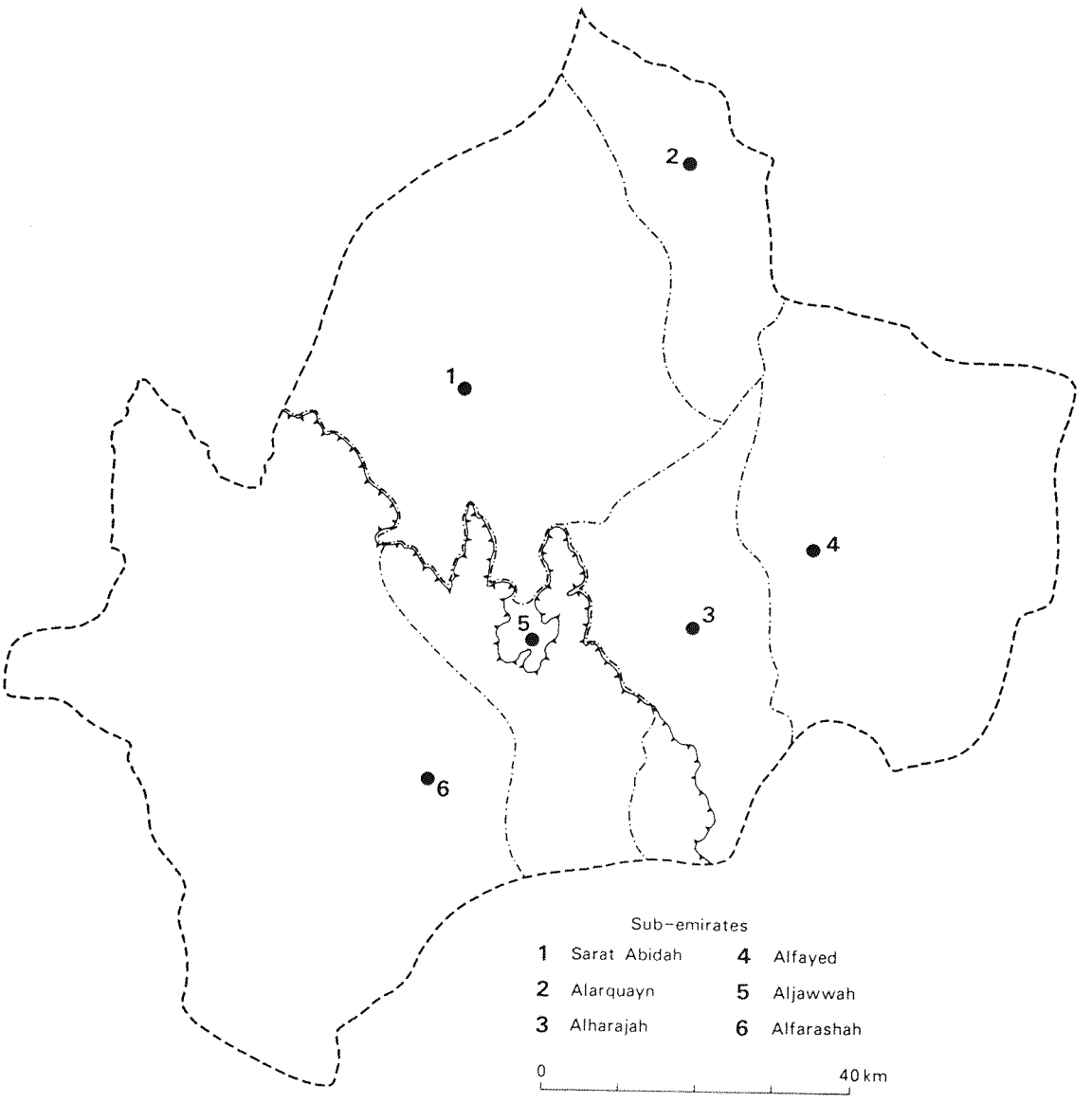


Figure 8.3 Subemirates with their centres in the subregion, 1987

the mountain population in 1974 and 89.6 percent in 1983. It was found here because of the good sites for farming, better climate and more abundant water supplies. The smaller part of the population in the mountains were nomads, most of them found on the dry flanks of the mountains towards the northeast of the zone but their numbers actually declined between 1974 and 1983.

Table: 8.4
The subregion's population by zone and sector in 1974 and 1983.

Zones	1974 *	%	1983 **	%
Mountain Zone	38,125	-	77,628	-
Rural	29,193	77.0	69,528	89.6
Nomad	8,932	23.0	8,100	11.4
Tihama Zone	15,805	-	22,570	-
Rural	292	2.0	7,390	33.0
Nomad	15,513	98.0	15,180	67.0
Total	53,930	100.0	100,198	100.0

Source: * The 1974 Census
** The Asir Emirate Study, 1983.

Nearly all of the Tihama's much smaller population was classed as nomadic at the time of the 1974 census. Only 2 percent was then enumerated as rural, although by 1983 this had increased to 33 percent. It is clear that population growth has been greater in the mountains than in the Tihama between 1974 and 1983. The total population of the mountain zone had increased by about 104 percent while the Tihama's population grew by about 43 percent. But the nomadic population had declined in both zones to 11.4 percent of the total population in the mountain zone and to 67 percent in the Tihama zone, as a result of the government policy to settle them in permanent locations. Thus, between 1974 and 1983 the rural population in the mountains increased 126

percent and a massive 2431 percent in the Tihama .

Another feature of the study area's population change is not revealed in Table 8.4. This was the rapid growth of the main centre of the subregion (Sarat Abidah) which was now classed as an urban place. This grew from 963 persons in 1974 to about 3,500 in 1983 and remains the only small town in the study area. It therefore increasingly acts as a subregional centre although Alharajah village forms a smaller centre about 35 kilometres to the southeast.

8.3.2 POPULATION DENSITY

According to the 1974 census, the study area is one of the most densely settled rural parts of the Kingdom of Saudi Arabia. It had at the time of the census more than ten persons per square km compared with 3.2 persons per square km in the whole Kingdom. It was also more densely settled than the whole of Asir region which had about nine persons per square km in 1974.

Fig. 8.4 shows that using the 1983 data the more densely settled parts of the area are the subemirates of Sarat Abidah and Alharajah in the mountain zone with densities of about twenty and sixteen persons per square km.* The other two subemirates in the mountains are Alfayed and Alarquayn on the drier northeastern flanks. These had lower densities of less than eight persons per square km. Densities were similar in Aljawwah subemirate which is partly in the hilly Tihama and partly in the mountains. The Tihama area proper (the subemirate of Alfarashah) had the lowest density with

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* A small part of Alharajah subemirate is below the escarpment but this part contains little settlement. On the other hand Aljawwah subemirate lies mainly below the escarpment but includes some well settled land above it including its subemirate centre.

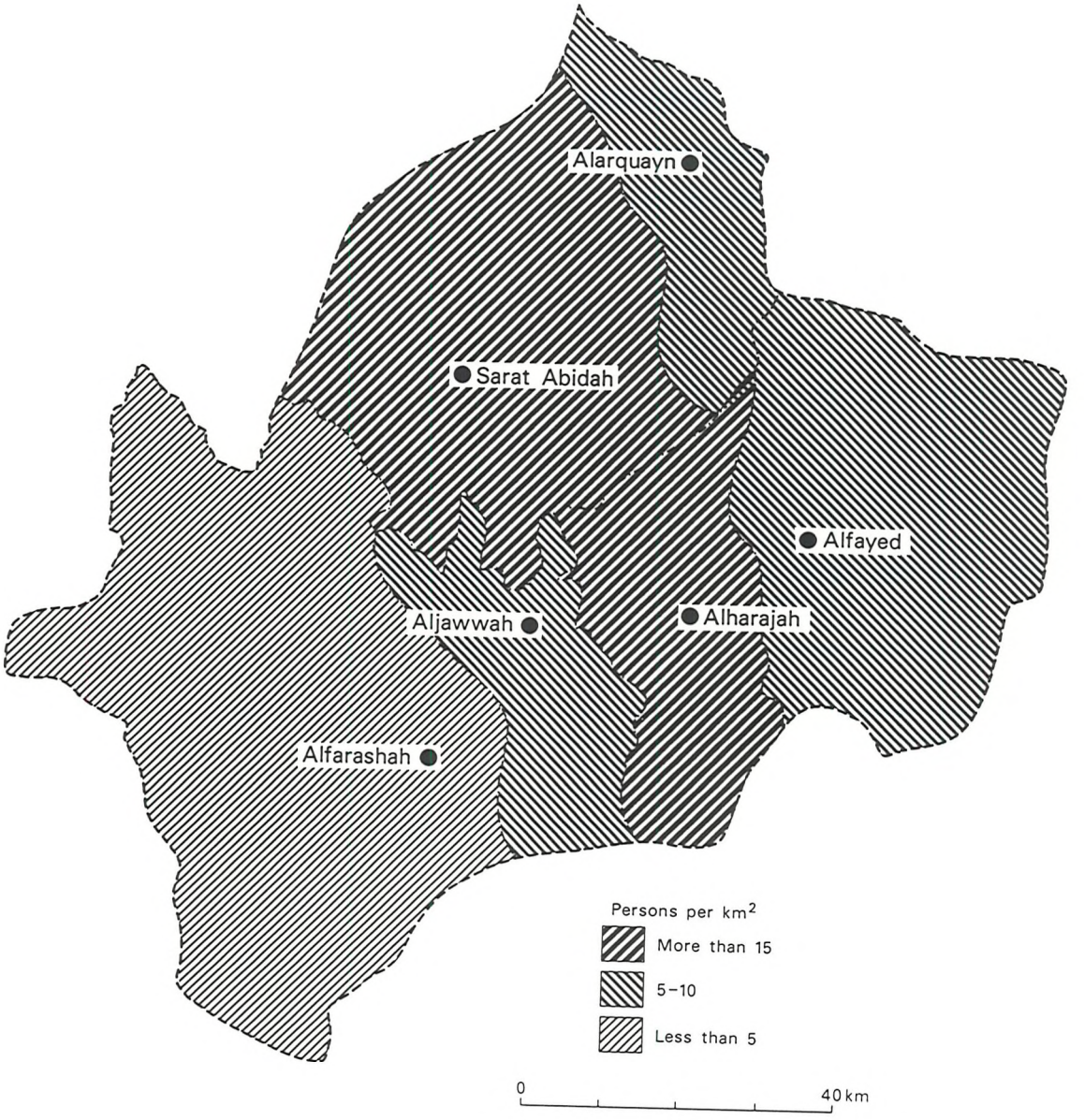

Figure 8.4 Density of population by subemirate, 1983

less than five persons per square km because of its dry character and nomadic population.

Because the subregion is largely rural the pattern of rural population density seen in Fig. 8.5 largely repeats the pattern the total population shown in Fig. 8.4. It again shows the greater concentration of rural inhabitants in the mountains particularly in the subemirates of Sarat Abidah with seventeen persons per square km, and Alharajah with fourteen persons per square km, with lower densities in the subemirates to the northeast. The Tihama area had the lowest densities with only 1.4 persons per square km in the main subemirate of Alfarashah.

The distribution of the nomadic part of the population seen in Fig. 8.6, reveals that densities are generally much lower than for the rural population. The most densely settled subemirate is Aljawwah on the mountain edge and including some better watered area of the hilly Tihama. Here there were more than four nomads per square km in 1983 while the other main nomadic areas, the subemirates of Alfarashah and Alarquayn had between three and four persons per square km. The rural subemirates of Alfayad and Alharajah had only about two nomadic persons per square km. The area with the lowest density of nomads was Sarat Abidah subemirate with less than 0.5 persons per square km. There are fewer nomads in the rural subemirates because of the suitability of their lands for cultivation and village settlement.

8.3.3 AGE AND SEX COMPOSITION

No detailed data on other demographic characteristics are available for the subregion since the 1974 Census. These are briefly repeated here as the best indication of the subregion's youthful and rapidly growing population. The

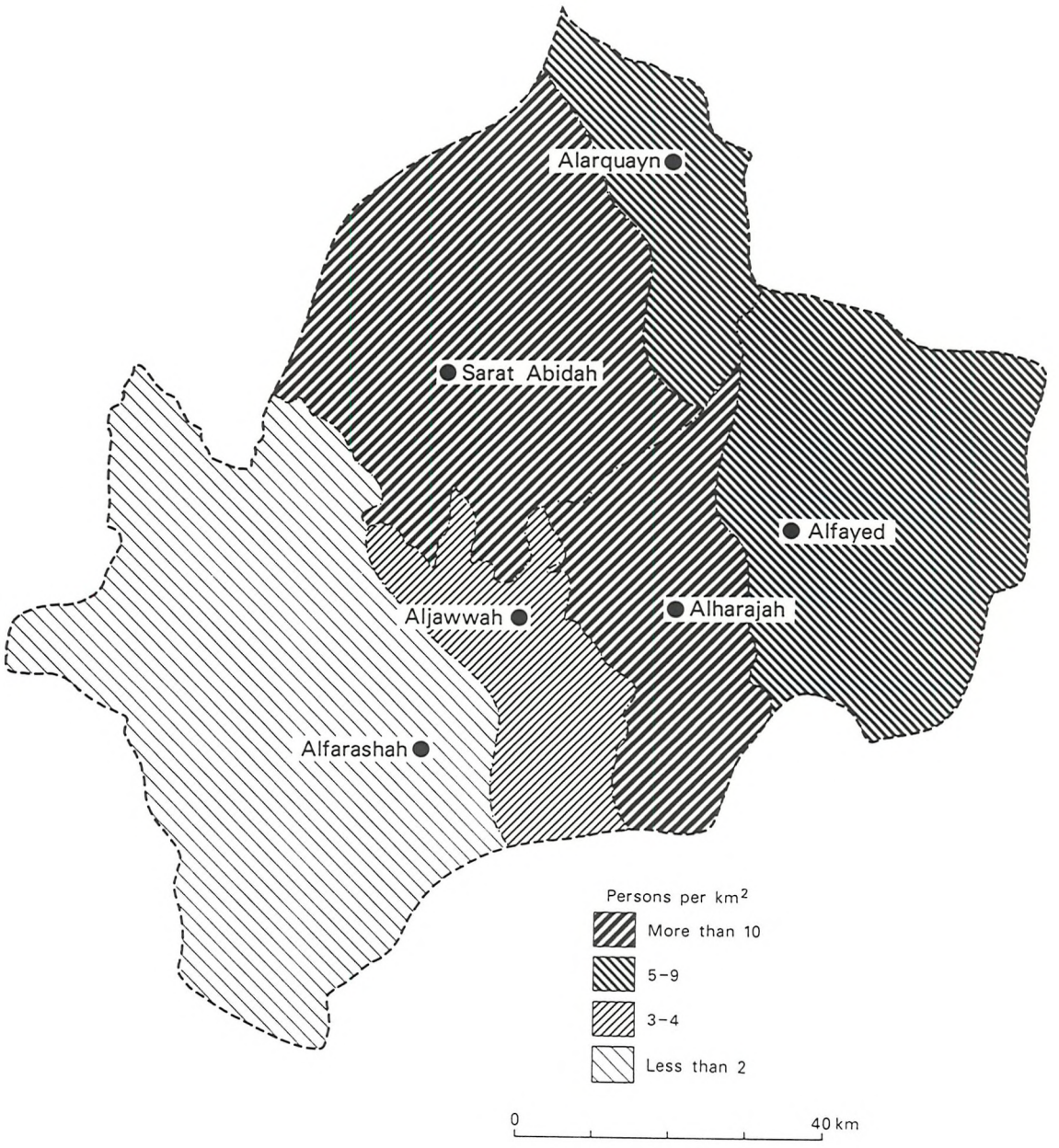

Figure 8.5 Density of rural population by subemirate, 1983

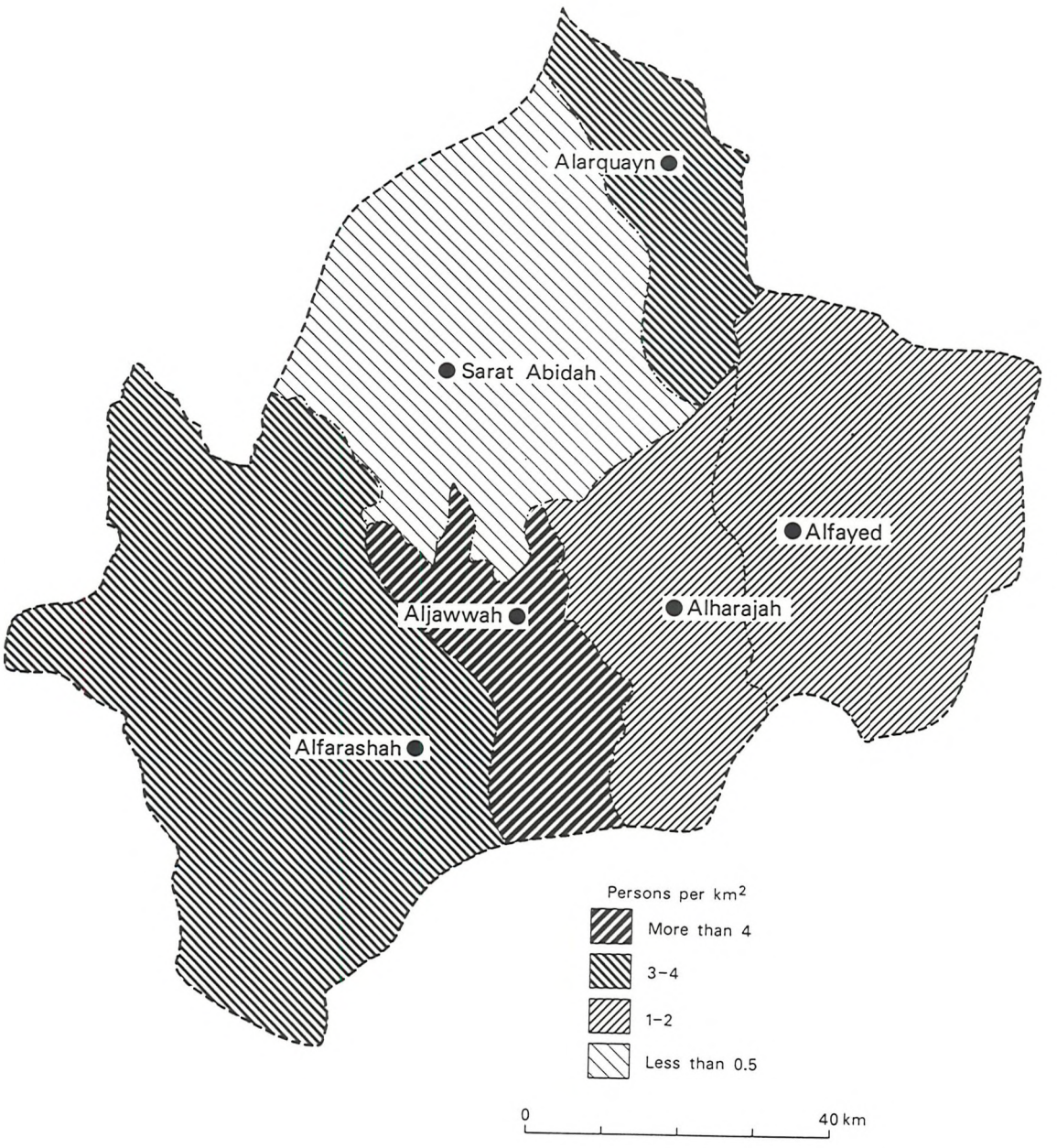

Figure 8.6 Density of nomadic population by subemirate, 1983

distribution of the subregion's population by age and sex on the basis of the 1974 census is shown in Table 8.5 and Fig. 8.7. This divides the area into its two zones to show the differences between them. The most significant feature of the study area's population in 1974 was the large proportion of the youthful age group under twenty years of age. This is related to the high fertility, a declining death rate and the large family size which are still characteristic of the whole of Asir .

More than 57 percent of the study area's population was under twenty years of age in 1974, giving a very young population pyramid with a vast potential for future population expansion. The Asir Emirate study estimated a 4.1 percent per year population increase in the subregion in 1983. In the mountain zone the proportion of those under 20 years was even higher than in the Tihama at 59.3 per cent compared with 54.5 percent. The difference between the two zones could result partly from the higher mortality amongst the youngest age group of the Tihama's population. For instance, the mountain zone had about 20 percent of its population under five years of age in 1974 whereas the Tihama had only about 14 per cent in that age group. But part of the difference is the artificial effect of the smaller active age group in the mountain population which therefore makes the younger age groups a more important part of the total population pyramid. The main active age group (between 20-49 years old) made up 30.6 percent of the total population in the whole area, little more than half of the younger age group. But because of high outmigration amongst the active population from the mountain zone, this age group (20-49) made up only 26.8 per cent of the total. This was much less than in the Tihama where 36 per cent of the population were between 20-49 years of age. This in turn is

Table: 8.5

The Subregion's population by zone, age and sex structure in 1974, (percent).

Age Group	Mountain Zone			Tihama Zone			Area
	Male	Fem.	Total	Male	Fem.	Total	Total
0-4	21.4	18.7	19.9	12.8	15.2	13.8	17.5
5-9	18.5	16.5	17.4	15.0	15.6	15.3	16.5
10-14	14.3	13.7	14.0	11.6	12.7	12.1	13.2
15-19	7.2	8.6	8.0	14.2	12.4	13.3	10.1
20-24	2.9	5.0	4.0	8.3	9.5	8.9	6.0
25-29	3.2	5.4	4.4	8.0	6.6	7.3	5.6
30-34	3.9	5.4	4.7	5.7	4.9	5.4	4.9
35-39	4.7	5.6	5.2	6.1	5.8	6.0	5.5
40-44	5.0	5.1	5.0	5.2	4.8	5.3	5.3
45-49	4.0	3.1	3.5	3.6	2.5	3.1	3.3
50-54	4.1	3.6	3.9	3.5	3.2	3.3	3.6
55-59	2.1	1.5	1.8	1.5	1.3	1.4	1.7
60-64	3.5	2.8	3.1	2.1	2.1	2.1	2.7
65 +	5.2	5.0	5.1	2.4	3.4	2.7	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: The 1974 Census

probably the result of differential migration rates, with more of the active groups leaving the mountain villages than the Tihama for other parts of Saudi Arabia.

Further evidence that differential outmigration is seen in the sex structure in 1974 in the two zones. In the mountain zone males (45.2 percent) were greatly outnumbered by females (54.8 percent) because it is mainly the men who migrate. In contrast, in the Tihama males made up 52 percent and females 48 percent of the total population because there is little migration.

It is also clear that differential migration affected the age and sex composition of different sectors of the population in the study area. Table 8.6, shows age and sex structure for each sector in the two zones. The rural male population in the mountain seem affected more by outmigration than the nomad sector in the same area. In the rural sector in the mountains the proportion of males of 20-49 years old formed less than 23 percent of the total rural males whereas it was about 27 percent of the nomad population. In the Tihama the 20-49 year age group stood at 35 and 38 percent of the total rural and nomad male population, showing that outmigration had far less impact here. The female proportion of the 20-49 year age group was higher than for males in the rural and nomadic population in the mountains because it was less affected by outmigration. Also the age group of 50 and over was less well represented among the Tihama's population than amongst the mountain population probably partly because of the poorer health and shorter life span of the Tihama people. This is also clearly seen in Fig. 8.7. The slower growth rate of the Tihama population which was suggested earlier is also clear in the restricted base of the population pyramid for the Tihama population compared with the mountain population.

Table: 8.6

Age and sex structure by zone and sectors for the Subregion, 1974 (percent).

Zone	Age Group			Total
	0-19	20-49	50 +	
Mountain				
Rural Sector	17,271	7,695	4,227	29,193
Male	62.1	22.3	15.6	100.0
Female	56.6	29.9	13.5	100.0
Nomad Sector	5,295	2,490	1,147	8,932
Male	59.1	27.1	13.8	100.0
Female	59.4	28.4	12.2	100.0
Tihama				
Rural Sector	163	102	27	292
Male	56.6	35.0	8.4	100.0
Female	55.0	34.9	10.1	100.0
Nomad Sector	8,481	5,573	1,459	15,513
Male	53.5	37.7	8.8	100.0
Female	55.9	34.1	10.0	100.0

Source: The 1974 Census.

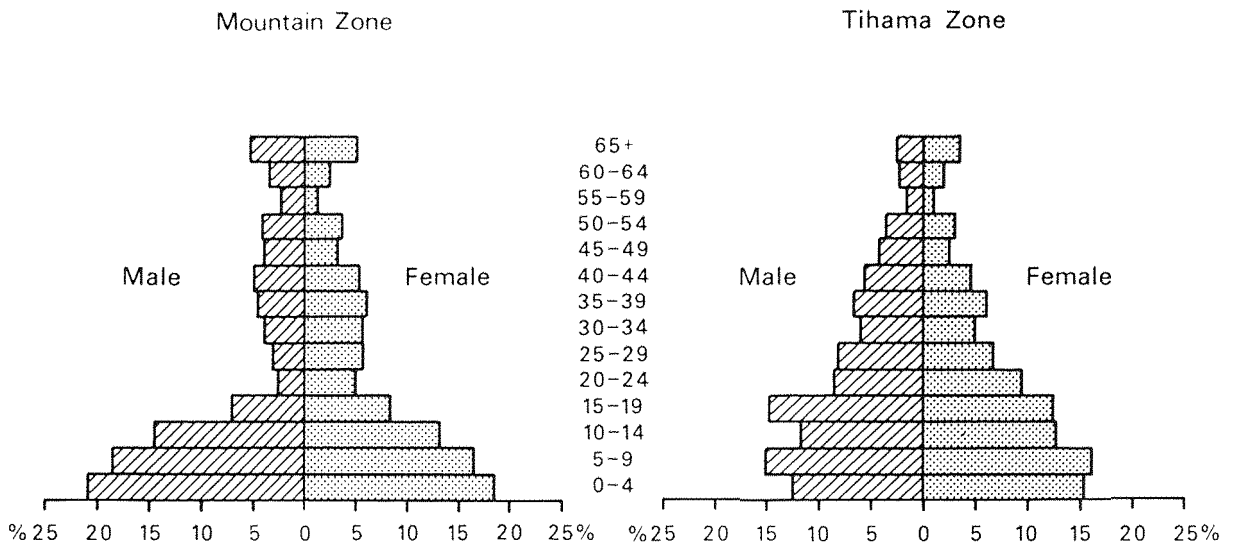

Figure 8.7 Age-sex pyramids for the subregion, 1974

8.3.4 EDUCATIONAL ATTAINMENT

In spite of the limited data on the educational status of the study area's population in the 1974 census, the enumeration included some information on the levels of literacy according to the population sectors. There is no survey data on literacy levels in the area since 1974 but undoubtedly they have risen greatly as schooling has rapidly expanded.

Table: 8.7
Educational status by sex and sector in the Subregion (10 years and over), 1974, (percent).

Educational Status	Rural		Nomad		Total
	Male	Female	Male	Female	
Illiterate	42.1	93.6	92.4	99.4	83.5
Read Only	9.4	1.1	4.4	0.1	3.2
Literate	47.8	4.5	3.1	0.1	13.0
Unknown	0.7	0.8	0.1	0.4	0.3
Total	100.0	100.0	100.0	100.0	100.0

Source: The 1974 Census

Table 8.7, shows the educational status of the population by sex and sector in 1974 . As would be expected in this remote rural area illiteracy was then very common. About 84 percent of those aged ten years and above were categorized as illiterate. This compared with an illiteracy rate of 64 per cent for the whole of Saudi Arabia at that time. In the study area the lowest rates of illiteracy were found amongst the male population of the rural sector where 42.1 percent were illiterate. This was a result of that sector's better access to education facilities than the nomadic population. Much higher rates were found among the rural females with about 94 percent of them illiterate. Very

high figures of illiteracy were found amongst the nomadic population. 92.4 percent of male nomads and 99.4 per cent of females were found to be illiterate.

The small percentage of rural and nomad persons judged able only to read was a result of the rudimentary education provided in the past by learning how to read the Quran. Overall only 13 percent of the population in the study area were literate and most of those were rural males who would be found in the mountain zone.

The marked differences in literacy levels between the Tihama and the mountains in 1974 and between males and females are not surprising. It reflects what was seen as the common pattern for Asir in chapter six. At the time of the 1974 census there were 43 schools for boys in the study area compared with six schools for girls. All of these schools were located in the mountain zone. No school existed in the Tihama before the 1974 census.

By 1987 the number of boys' schools had risen to 99 and girls' schools to 43. 25 of these boys' schools were in the Tihama but only one of the girls' school. With this level of development of schools since 1974 the level of illiteracy amongst the young age group can be expected to have dropped rapidly, but less so amongst the young females especially in the Tihama. Of course the adult population who grew up before schools existed in their district would continue to make up the bulk of the illiterate population. There is, however, no data on the current literacy levels for the area.

8.4 EMPLOYMENT AND AGRICULTURE

It has already been mentioned in previous chapters that the 1974 Census is the only systematic data source on other

socio-economic characteristics of the population of Asir and its subregions. But there have been major changes in the local economies during the 14 years since its production so that results for the present time based on its data must be treated with great caution.

As would be expected from the rural nature of the study area, agriculture is the prime means of employment. The 1974 census showed that 79 percent of the total labour force in the subregion was engaged in agricultural activities. Almost all of the arable farming is found in the mountain area. Agriculture in the subregion is everywhere dependent on supplemental irrigation either by wells, springs, or wadi dams, because rainfall amounts even in the mountains are either too limited or too variable to entirely support rainfed farming. But the opportunity for irrigation is limited so that agricultural acivities remain small scale and crops are often only for local consumption. In the Tihama, cultivated land is rare because of the more severe physical conditions. Here nomadic subsistence stock raising is the common occupation.

A 1981/82 agricultural survey showed that average farm size in the settled mountain areas was very small. Table 8.8 shows the number of holdings, and crop production for some major crops in 1981/82 for the part of the mountain area in the Sarat Abidah and Alarquayn subemirates which fell within the area covered by the survey. It can be seen that there were only about 3,600 holdings listed as growing the common crops with a total of 34,708 donums under these crops. On this basis the average farm size is under ten donums, or one hectare. Sorghum and wheat were the two main cereals grown, and these occupied 52 percent of the total cultivated land in the surveyed area. More valuable and intensive fruit and vegetable crops occupied much less

land and these farms were even smaller.

Table: 8.8

Number of holdings, area and production for some crops in Sarat Abidah Agricultural Directorate, 1981/82.

Crops	No. of holdings	Area in donums	Average donums per farm	Production in tons
Total Crops	3,585	34,708	9.7	-
Sorghum	1,863	9,169	4.9	1,651
Wheat	1,494	8,736	5.8	1,670
Citrus	-	1,017	-	-
Vegetable	41	92	2.2	-
Other	187	15,694	-	-

Source: Census of Agriculture, 1981/82.

Arable cultivation is complemented in the mountains by stock farming with most villagers possessing numbers of livestock which graze on the village rangelands as well as on cultivated alfalfa and various residues from other crops. According to the 1981/82 agricultural census there were about 117,000 sheep and 15,000 goats in the Sarat Abidah and Alarquayn subemirates covered by the survey. No similar data is available on the number of livestock kept in other areas like the Tihama where goats are the dominant animal. With farming on such a small scale and still largely traditional, it offers small returns and many farmers have in recent years shifted to better-paid jobs in other parts of the economy, although the local economy remains insufficiently diversified to offer many of these. Furthermore the local population lacks most of the skills needed by jobs other than farming.

Table 8.9 shows the limited range of economic activities in which the adult population in the subregion was involved in 1974. It can be seen that agriculture was the most

Table: 8.9

Working population twelve years and over by economic activity in the Subregion, 1974.

Economic Activity	Mountain Area		Tihama Area		Subregion Total	
	Employment	%	Employment	%	Employment	%
Agriculture	6,096	71.2	4,969	90.6	11,065	78.8
Social services	1,247	14.6	111	2.0	1.358	9.7
Transport & Communic.	576	6.7	-	-	576	4.1
Construction	227	2.7	370	6.8	597	4.3
Manufacturing	205	2.4	-	-	205	1.5
Trade	114	1.3	10	0.2	124	0.8
Electricity & Gas	11	0.1	-	-	11	0.1
Miscellaneous	81	0.9	21	0.4	102	0.7
Total	8,557	100.0	5,481	100.0	14,038	100.0

Source: The 1974 Census.

dominant activity of the population, with 79 percent of the total economically active population engaged in it. A much smaller but significant number of jobs had been created by social services as a result of the development of schools, health services and other community services. As early as 1974 employment in social services accounted for about 10 percent of the total working population, and this proportion would have been much higher by the mid 1980s as rapid growth had occurred in this sector.

Construction, transport and other communication activities provided 8.4 percent of jobs in 1974. This figure has probably greatly expanded in recent years as a result of the boom in construction and transport activities, not only in the mountain area but also in the Tihama where modern construction and motor transport has only recently been introduced to the nomadic settlements. All other employment forms were much less important in 1974 and remain unimportant. Manufacturing and mining activities are still at a very early stage of development in the study area, and only include woodworking, brick manufacture and some simple handicrafts mainly around Sarat Abidah town. Nor was there much employment in trade and financial activities at the time of the 1974 census, although the commercial sector, particularly in Sarat Abidah town and Alharajah village and along the main highway from Khamis Mushayt, has been developing rapidly since then.

Large variations existed in 1974 between the mountains and the Tihama areas in the economic activities of the population. As Table 8.9 shows the economic activity of the mountain population was more diversified than that of the Tihama. This was because there had been a rather longer period of development in the mountain area whereas the Tihama area was still dominated by a largely isolated

nomadic population mostly engaged in herding. The nomads showed much higher levels of illiteracy and lack the skills to help spread a more diversified economy. Only in construction employment did the number of workers in the Tihama rival those in the mountain zone.

Table 8.10 provides more detail about the skill level of the mountain and Tihama populations as they were in 1974. Again the dominance of the agricultural workforce in both the mountain and Tihama areas is clear, a dominance that is almost total in the case of the female workforce, which was a much smaller workforce than that of the male. The next largest category of jobs after agriculture in the subregion in 1974 was labouring which involved about 14 percent of the total working population, but few women. Farming and labouring together took up 93 percent of the men in the workforce and more than 98 percent of the women. Both of these groups of activities can be described as mainly unskilled and provide low incomes. Table 8.10 shows that a higher proportion of jobs in the Tihama than in the mountains were in these categories.

Despite the fact that professional, clerical, service, sales and managerial jobs formed only a small proportion of the total skills in the area in 1974 they have expanded since. In 1974 professional and clerical occupations only made up 4 percent of the total male employment and just 1 percent of female workers, but they probably represented a larger share of the jobs which were done by the younger employed persons who had been able to obtain the necessary level of education and training. In all of these categories more of these more skilled jobs were found in the mountains than in the Tihama.

The dominant influence of the agricultural basis of the local economy, along with the very limited number of women

Table: 8.10

Working population twelve years and over by type of skill and sex in the subregion, 1974, (percent).

	Mountain Area		Tihama Area		Subregion Total	
	Male	Female	Male	Female	Male	Female
Total Worker	7,213	1,344	4,790	691	12,003	2,035
% Total	84.3	15.7	87.4	12.6	85.5	14.5
Farmer and herder	73.9	95.8	89.4	99.6	80.1	97.0
Labourer	15.1	1.6	9.6	-	12.9	1.1
Professional	3.6	1.5	0.2	-	2.2	1.0
Service workers	3.3	1.1	0.5	0.4	2.2	0.9
Clerical workers	3.1	-	0.1	-	1.9	-
Sale workers	0.9	-	0.2	-	0.6	-
Managerial	0.1	-	-	-	0.1	-
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: The 1974 Census.

in the workforce, help to account for the relatively small percentage of the workforce which was defined as employed in 1974. The situation has not changed much since then. As Table 8.11 shows only 43 percent of the economically active age group were described as in the employed category in 1974 and most of them were farmers. Another 39 percent of the economically age group were described as housewives who often work on the family farm as well as in the home. The student population and the disabled and retired population each made up about 7 percent of the total.

Table: 8.11
Economically active population by economic status in 1974, (percent).

Economic status	Mountain	Tihama	Total
Employed	35.2	53.1	43.1
Housewives	42.8	34.9	39.3
Student	11.7	0.3	6.7
Disabled & Retired	8.7	5.8	7.4
Unemployed	0.6	4.1	2.2
Own Income	0.7	0.6	0.7
Unknown	0.3	1.2	0.6
Total	100.0	100.0	100.0

Source: The 1974 Census

There were relatively large variations in the proportion of the population in various economic categories across the two zones of the study area. With much smaller proportions of housewives and students than in the mountain area, the Tihama had a rather larger proportion of its population simply described as "employed". These would mainly be herders. It is, however, the very low percentage of the active population in the Tihama described as the student population - less than 1 percent - that probably showed most clearly the difference in development between the two areas. The first elementary school did not open in the

Tihama until 1976 so that almost none of the economically active population in the Tihama would have been in education at the time of the 1974 census, compared with almost 12 percent of the population in the mountains.

No data is available on the employment patterns at the present time in the subregion. However, there have been considerable changes in the economic activities of the population with a relative decrease in agricultural employment and an increase in the number employed in various government services as well as other private activities as the needs of development and the increases in skills have begun to diversify the local economy.

This chapter has shown that the subregion is not uniform in the physical and socio-economic characteristics. It is clear that the subregion is geographically divided by the escarpment into the more prosperous, well populated mountain area and the more nomadically populated Tihama area with its lower living standards and much more difficult terrain. It is also clear that the subregion is characterized by a youthful and rapidly growing population with more than 57 percent of it under 20 years of age in 1974. This indicates that there is a vast potential for future population expansion. According to the rate of growth (4.1 percent), the total population of the subregion can be calculated for 1987 at some 117,669, or 17 percent more than the 1983 estimate figured. The subregion is also dominated by a large rural population with its largest urban base in Sarat Abidah town with about 3,500 inhabitants in 1983. Because of the rural nature of the subregion, it is characterised by a large illiteracy rate, a low level of skill, and a limited range of economic activity with 79 percent of the working population engaged in agricultural activities.

CHAPTER NINE

SETTLEMENT PATTERNS IN THE SUBREGION

9.1 VILLAGE TYPES AND SIZES

It has been noted in previous chapters that considerable doubt still exists on the number of villages to be found in Asir. This uncertainty also applies to the study area partly because of a lack of previous detailed survey and partly because of the difficulty of defining a village and discriminating between a small hamlet, a cluster of family buildings, a seasonal nomadic settlement or a single isolated farmstead. In Arabic there is no clear definition of the term "village" (guryah), 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. In Asir settlements can commonly vary from a cluster of no more than about seven houses to as many as two hundred houses, and the general term "village" is applied to all of them here.

In the last few years several estimates of the number of villages in the study area have been made. The 1974 census gave a total of 182 populated places in the part of the area covering Sarat Abidah, Alarquayn, Aljawwah and Alfarashah subemirates. This excluded that part of the study area covering Alharajah and Alfayed which was included with Dhahran Aljanub district. Therefore it is not possible to determine from the 1974 census the total number of villages in the whole study area. The Asir Emirate study in 1983 gave a total of 427 villages in the subregion. The study by the Sogreah consultancy company for the Deputy Ministry for Rural Affairs enumerated 316 villages in the six subemirates of the study area. But it has already been noted that this

report underestimated the rural population. It is therefore probable that the Asir Emirate study figure, listing 427 separate settlements, is the more correct and this is now the basic data source used by the Ministry of Planning and other government agencies.

On this basis and with the help of extensive field checking and observation, the author has constructed a map to show all the settlements in the study area which he could identify. These are shown in Fig. 9.1. 407 villages are plotted , 20 less than indicated in the Asir Emirate study. Much of this small discrepancy results from the Asir Emirate study locating 26 villages in the Alfarashah area of the Tihama. The writer could only find eight of these villages on the basis of having permanent houses, and their own mosque and cemetery, which can be taken as clear evidence of permanent settlement in a nomadic area. These 407 villages form the basic settlement pattern referred to throughout this chapter. They account for nearly 94,000, or about 80 percent of the subregional population, the remainder being the nomadic population with no fixed settlement location.

Villages in the study area vary in pattern, type and size. They range from well-clustered villages, through to loosely-scattered hamlets and sometimes isolated, individual farm houses. These villages and hamlets were originally sited where they could command useful soils for farming and the necessary water supplies, and generally had a good defensive position. For these reasons, as can be seen in Fig. 9.1, the density of villages varies across the area. Most villages are found in the main mountain zone in a broad strip parallel to the escarpment where numerous patches of wadi basin and rainfed terraced lands can be found to support quite a dense pattern of farm villages. To the north and the east of this zone, where aridity increases, there

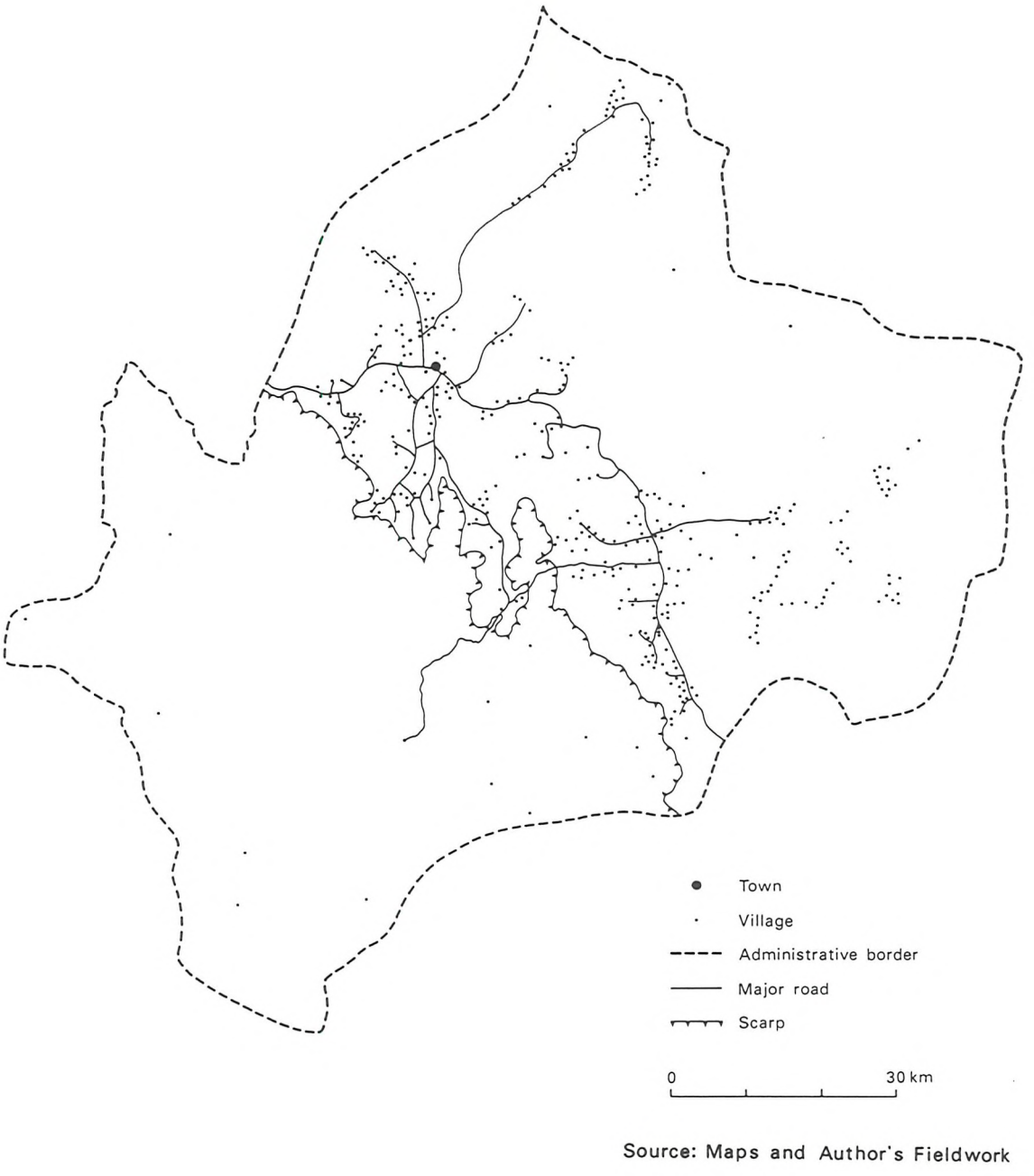

Figure 9.1 The settlement pattern in the subregion

are wide uninhabited areas with the villages confined to wadi floors. In the Tihama permanent settlements are very widely dispersed across the area because of the aridity. The distribution of village settlements in these three areas is further analysed statistically later in this chapter.

Apart from variations in locations of villages two main types of villages are immediately apparent - the generally older established mountain villages and the new nomadic villages in the Tihama and on the eastern and northern flanks of the mountain zone which result from the recent nomadic sedenterization programme. Many variants of the mountain villages are found and photos 9.1 and 9.2 provide illustrations of some of these. The great majority of the mountain villages have occupied their sites for long periods of time but as their populations have increased new hamlets have appeared at some distance from the old villages, where available land can be used. Often old houses in the nucleated traditional village have been abandonned for newer houses built in more spacious surrounding at the village edge.

On the other hand, village settlements in the Tihama and on the flanks of the mountain range are much more recent establishments as the nomads have settled down (Photos 9.3 and 9.4). Only one village was listed in the Tihama at the time of the 1974 census - Alfarashah with only 53 inhabitants - and it is clear from field observation that permanent settlements are still in an early stage of development there but are rapidly appearing.

One of the main features of the villages in the study area, as well as in Asir region, as already mentioned, is the variety of their sizes. Table 9.1 classifies the 407 villages in the study area according to their population, given in the 1983 Asir Emirate study. It can be seen that

Photo 9.1 Typical agricultural village (Mathab) in the mountain area of the subregion (see Fig. 9.3)

Photo 9.2 Typical agricultural village (Sarwom) in Alfayed area in the eastern part of the subregion, the village health centre is on the left hand side of the photograph in front of the two tall mud houses

Photo 9.3 A nomadic settlement (Almnadiyah) in Alarquayn area in the northern part of the subregion

Photo 9.4 A newly established nomadic settlement in the hilly Tihama area of the subregion

most villages - in fact 83 percent - had populations of under 300 in 1983. Villages with between 100 to 299 inhabitants were most common, making up nearly 58 percent of the total, while villages with less than 100 inhabitants each made up 26 percent of the total number of settlements. Few settlements are larger than 900 population, the only one being much in excess of this being Sarat Abidah town with 3,500 inhabitants in 1983.

Table: 9.1

Village classification according to population size in the Subregion, 1983.

Village size	village No.	Percent	Cumulative %
< 100	104	25.6	-
100 - 299	235	57.7	83.3
300 - 499	47	11.6	94.9
500 - 899	16	3.9	98.8
900 - 1300	4	1.0	99.8
> 1300	1	0.2	100.0
Total	407	100.0	-

Source: Asir Emirate Study, 1983.

It is not possible to compare the results of the 1974 census and the 1983 study to analyze the growth of villages because the census aggregated the village population totals for subemirates. Field observation would suggest considerable village growth in recent years.*

Fig. 9.2 shows the distribution of villages by population size in 1983. The smallest villages are found mainly around Alharajah, Alfayed and Alarquayn areas, that is in the eastern and northern mountains where suitable

* The only settlement for which comparable data is available is Sarat Abidah, the largest place in the study area. This had a 263 percent increase between 1974 and 1983.

land and water is sometimes in shorter supply and only small settlements can be supported. The people in each of these smaller villages usually consist of one extended family as is seen by villages often being named after the family. In the area around Sarat Abidah town and all along the scarp the villages tend to be larger. The size of these villages relates to the many favourable sites in this area for farmland together with sufficient water resources from wells and run-off from the surrounding mountain slopes.

It is not surprising that the few village settlements found in the Tihama area are large partly because there are few suitable sites to locate villages. Another reason for the large size of these villages is the tendency for many nomads and semi-nomads to build houses in villages from which they can wander with their stock for some of the time each year. Recent government programmes to settle the nomads have tended to enlarge these settlements rather than create new ones.

Another characteristic of the villages in the study area is the variety of the traditional house types. This is in part related to the building materials used. The detail of traditional house types is outside the scope of this study but it is worth noting that two main types of traditional houses, as well as more recent types, can be found within the study area. Firstly, two or three storey houses constructed of stones and mud can be seen throughout the mountain zone but especially in the villages. In these older houses the bottom part of the ground floor is of stone to give it strength to support a tall building. Above this the construction is of mud with schist stones jutting out from the walls to offer them protection from rain wash. Window area is small. Houses of this type, rising to two, three and sometimes four storeys are especially common in the villages

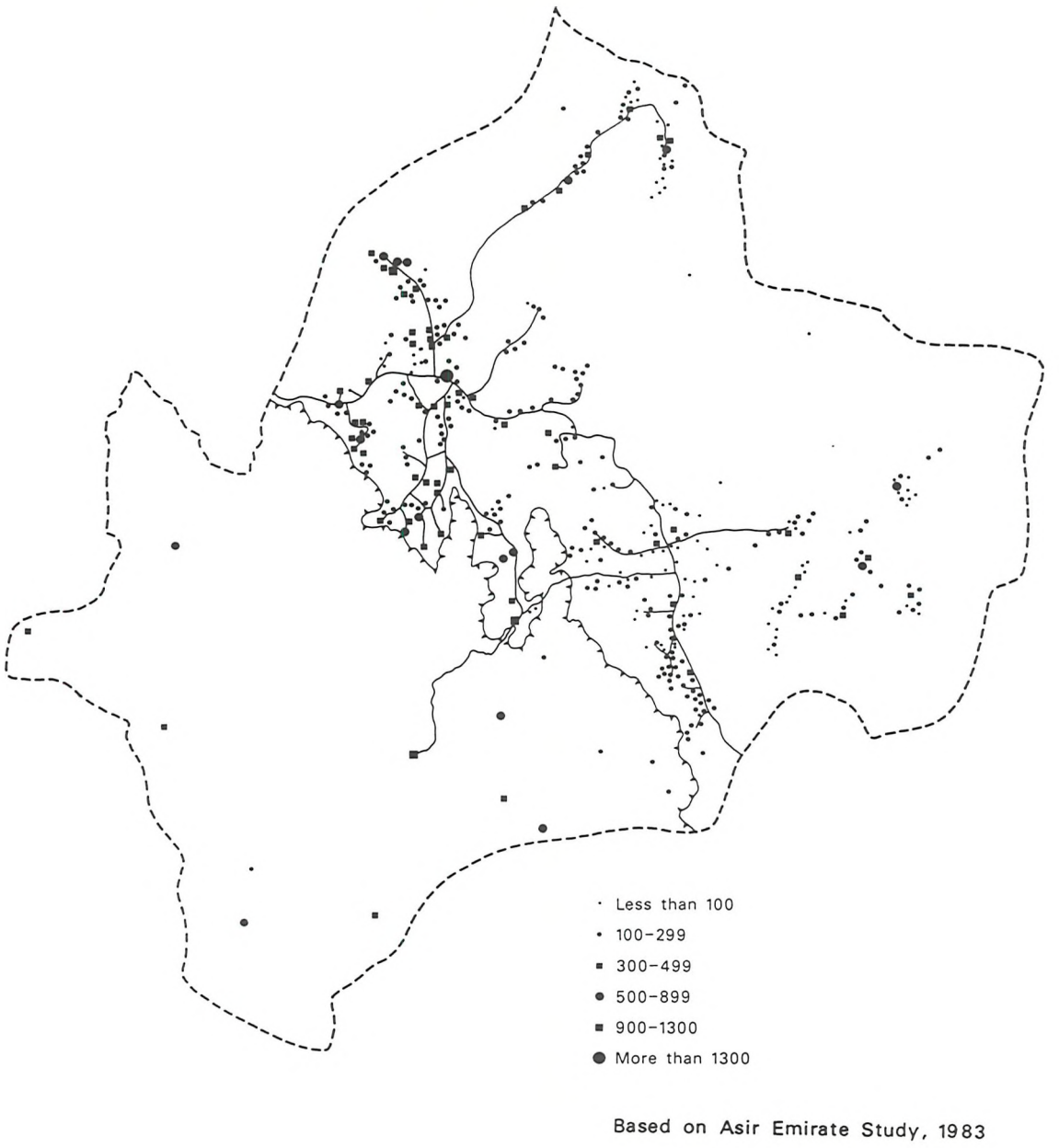

Figure 9.2 Distribution of villages according to population size

around Sarat Abidah town. They are large enough to house the traditional nuclear family. Another feature commonly associated with these villages are tower structures called "qasabah", which usually rise to more than four storeys. Each village had between four and eight of these depending on its size. They were generally built of the same materials as the houses but with windows reduced merely to holes. These towers served two main purposes in the past: to store the villagers' grain and to serve as defensible points in times of insecurity.

Variants of the traditional mountain houses are found in the area. To the south in the Alharajah and Alfayed areas typical older houses are mostly taller, of three or four storeys, and constructed of thick mud walls but without the rain protection slates. Similarly to the northeast other types of very substantial mud houses are found.

In marked contrast to the mountain houses are the nomadic tents and the traditional hut shelter in the Tihama area. Known as "ishsha" these huts were constructed merely of a circle of straw and wood with a diameter of four to six metres and containing only one or two small rooms. Whereas the mountain houses displayed some degree of permanence and even rural wealth, the Tihama ishsha were extremely basic structures that offered little shelter and signified the extreme poverty of their inhabitants.

The recent rapid socio-economic development in the study area has influenced the architecture and the use of building materials and has led to quite different building styles for newer houses in both the mountain and Tihama areas. In the more prosperous mountains the modern houses are often large but much lower than the traditional houses they replace. New houses are built of cement blocks or hewn stone and have more windows. Privacy is maintained with a surrounding

courtyard. In the much poorer Tihama the nomads have taken to housing themselves in crude, small one storey houses of cement blocks, often of no more than one to three rooms, in place of living in ishsha or tents.*

While villages varied in density, type, size and building style, until recently they varied little in their services because most provided no services at all. They simply provided shelter and security for their inhabitants who operated a largely subsistence economy and the village layout reflected this. No old maps exist to show the traditional layout of the village in relation to the land which the inhabitants farmed and grazed around the settlement. Neither are modern village plans available. Nevertheless, Fig. 9.3, drawn from the author's own field observations, depicts the current layout of one mountain village -Mathab- about 23 km south of Sarat Abidah town on the edge of the escarpment. This is a village of about 350 persons living in 41 houses each large enough for the typical Saudi family. The original village is sited close to a wadi channel that drains down to the escarpment, but the village lies slightly raised above the wadi to free useful space for farmland. The original village core was circular in form and was surrounded by a large number of farm plots.

Villagers would go out from the village to their land each day. More than 300 plots were counted and these varied in size from very small plots of less than a quarter of a donum in area up to other plots of about three donums. Villagers now raise wheat, corn, barley, citrus, vegetables

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* Sadly, there is little interest by the government or from the people to preserve the unique traditional building styles in either the mountain villages or in the Tihama so that the ishsha is now rarely seen and the traditional houses and towers in the mountain villages stand unoccupied and crumbling in the middle of the old villages.

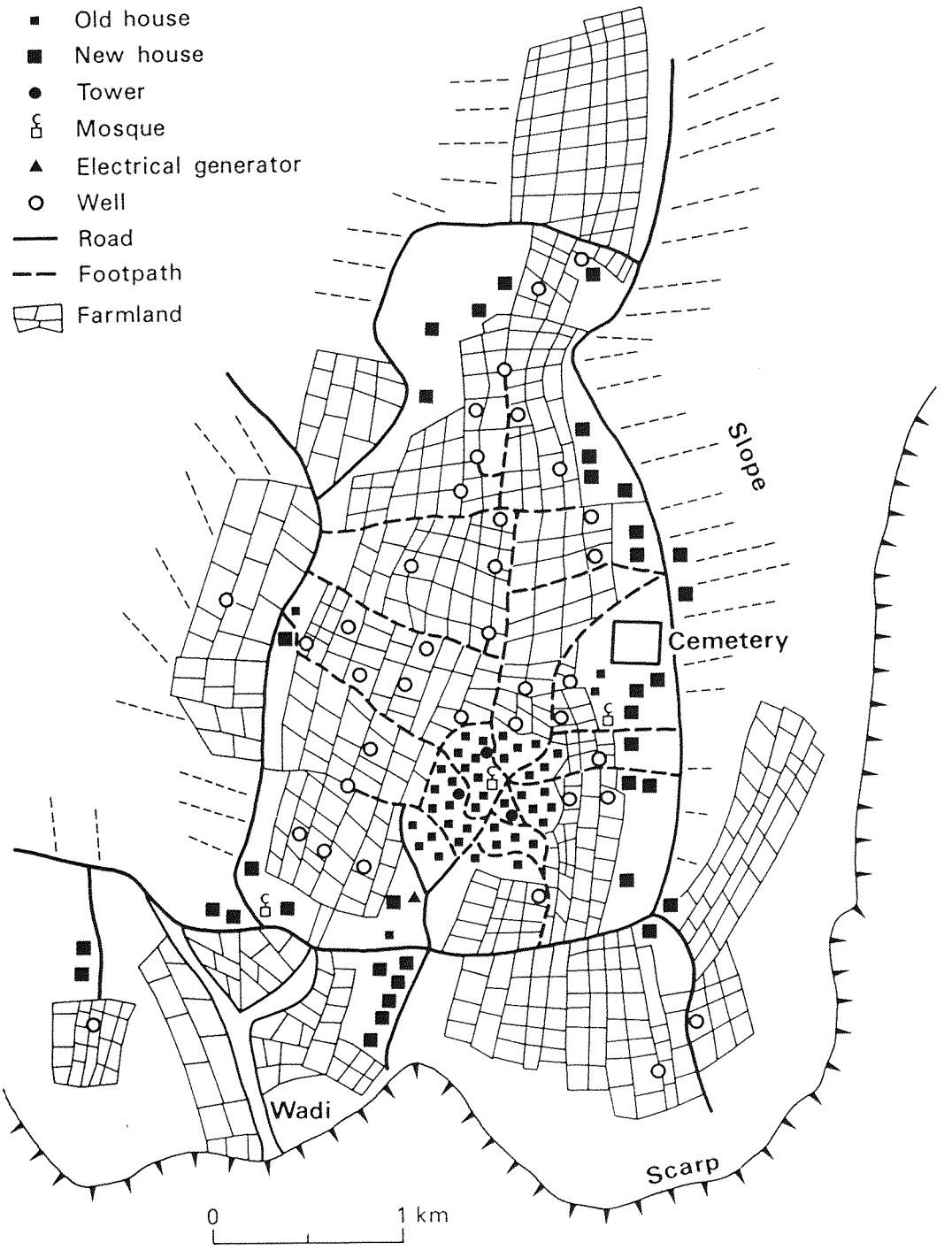

Figure 9.3 Layout of Mathab village in the mountain range of the subregion

and alfalfa, the main animal fodder on these plots. Most of these lands are irrigated by wells. 39 wells were counted scattered across the fields and around the village. Some of these wells also provide water for domestic use. Other farmers used side slopes to collect runoff water and every field has a ditch at its side to direct runoff. Although fields vary in size, the traditional landholding method ensured that no one family could become much richer than others and there was no social stratification within the community by which more wealthy members coud gain much more land than others. Lands were distributed amongst each member of the family according to the Islamic law so that all households would have approximately the same size of holding. Many of these traditional values are still retained. Beyond the farm land is the grazing land (hima). This is still owned by the community, and villagers share its pasturage and other resources, like fuelwood, equally. In the past disputes would have often arisen between the village and neighbouring villages over the correct position of boundaries of adjoining hima lands.

The old houses in the centre of the village were built close together around the village mosque and often joining each other. Each is a large, multi-storey structure of mud blocks lined with their characteristic rocks to protect the mud walls. Some houses are four or even five storeys tall. Four towers, each of five storeys, which acted as grain stores and as defensive points in times of tribulation in the past, stand amongst the houses. The original street plan of this compact settlement consisted of only seven narrow tracks, wide enough for only two persons to pass. These lead from the village centre to the surrounding fields. Other cross paths connected up with these.

As a result of the recent rapid socio-economic

development in the country and the consequent improvement of living standards, the pattern of houses, communications and the use of land have changed markedly in this village as in others. This has mainly affected the land adjacent to the old village centre. Asphalted roads, provided by the Ministry of Transport now cross the village farmland well outside of the crowded village core with short links into the village centre for vehicle access. Many villagers have built new homes in quite large plots beside these roads outside of the old village core, and generally closer to the households' farmland. As a result most of the old houses in the village centre are no longer lived in. In his survey the writer counted a total of 79 houses. 43 of these were built in the traditional style and all but four of these old houses were in the village core. Only six of the 39 houses in the village core were still occupied. Many which were unoccupied were falling into disrepair. The families who have abandoned these houses now live in the majority of the 36 new houses outside the village centre, although five of these are owned by members of the village now living outside the area. In total only 41 of the 79 houses in Mathab are lived in and most of these are the newer houses away from the old core.

The simple morphology of this village, which is typical of most others in the mountain part of the subregion, owes its simplicity to the fact that there was no class stratification, no specialist function performed by some of the inhabitants, and virtually no services. Even in Mathab today there are no services apart from two mosques, a cemetery and a small electrical generator. This was provided by the Ministry of Industry and Electricity after the inhabitants agreed to the installation of the supply network. This supply was, in fact, not working at the time

of the writer's field survey, and has not been functioning for some years so that most households provide their own power from their own small generators. Mathab still has no school, health centre, shop or other services. The children of the village, both boys and girls, attend elementary and intermediate schools in the neighbouring village of Alabidiyah which is more than five km away, while secondary age children go to the school at Sabat Bani Bishr about eleven km away. Villagers also use the Sabat Bani Bishr health centre and go to Sarat Abidah town, more than 22 km away, for other services.

9.2 THE SOCIAL ORGANIZATION OF VILLAGES

It could be argued that service provision could increasingly become the main differentiating feature in Asir's villages. This will determine which will prosper and grow and which will stagnate and possibly decline. But successful service provision depends on understanding village needs. One important factor that should influence the choice of location of services for the numerous villages in the study area, apart from population size, is the tribal affiliation. The role of the traditional tribal confederations has always played its part in the creation of the pattern of many small villages found in the study area. While some villages were closely linked by family and tribal ties, others were considered "foreign" because they were affiliated to different tribes. Such tribal affiliations have been weakened in recent years, but they can still influence decisions on where to locate public facilities, sometimes leading to the choice of sites which, at first appearance, may not seem very suitable for major service location. In the study area, as in other parts of the

Kingdom, the traditional pattern of tribal confederations was based on major subdivisions or subtribes known as "Qabilah". Each tribe and smaller grouping, would have a clearly defined area and even each village would have clear territorial borders, usually marked by stone bulks or other physical divisions which would be well-known to the local population. The size of these tribal and clan areas would reflect the size and the strength of the group in relation to neighbouring groups. The four major tribes in the mountains of Asir are from north to south: the Rijal Alhajir, Asir, Shahran and Qahtan. These tribes further divide into subtribes and each subtribe into many subdivisions or "fakhad". These further subdivide to the family clans (lahmat). Every lahma consist of many extended families whose members may live in several villages and hamlets.

The dominant tribal confederation in the subregion of Sarat Abidah is the Qahtan. This tribe consists of seven major subtribes, i.e. Rufaydah, Bani Bishr, Janb Bani Sad, Abidah, Shrayf, Sanhan and Wadiah, each of which comprises many fakhad and clans. The paramount shaykh of the Qahtan confederation tribe is Ibn Dulaym. He lives in Alharajah village which is therefore also known as "Shaykh Alqabilah". Each subtribe has a leader (Shaykh Ash Shaml) who would usually live in the chief village of his subtribe. For example, the Shaykh of Abidah subtribe lives in Sarat Abidah town while the Shaykh of the Bani Bishr subtribe lives in Alasran village, the largest village of his subtribe.

The importance of the traditional tribal organization in the villages and amongst the nomadic communities has declined in recent years with the rapid growth in the influence of central government bodies on all areas of

society. But there are two ways in which the tribal tradition remains important. First, the leaders of the tribes and subtribes can still have a great deal of influence on the government at the local level by pressing for various projects for their communities, and government officials still have to take their requests seriously. Thus, one would expect services to be provided in the main village of a subtribe before they were provided in lesser villages. One would also expect services to be provided to more important tribes before coming to lesser tribes.

Second, each village has a village council made up of members elected from the village clans (Lahmat Alqaryah). Usually a council has four representatives which gives it the name Arabat Aljamah or "the four of the community". All adult males in each lahmat in the village can elect their representative. The head of this council becomes the village head (Naib) and is recognized by the governor of the province. The Naib represents his village community at the tribal assembly and in the past was called upon in the event of land disputes between different villages. Most importantly nowadays he is able to submit petitions for various village improvements to relevant government departments. Hence villages with more effective representatives could well obtain more services than other villages. Nevertheless the influence of the Naib is limited because most decisions on the location of government services in villages are taken outside of the region where officials have to consider all the competing claims for resources. One of their considerations is to meet the needs of each administrative area in the subregion.

9.3 LOCAL ADMINISTRATION

The subregion of Sarat Abidah now consists of six administrative areas: Sarat Abidah, Alharajah, Alfayed, Alarguayn, Alfarashah and Aljawwah. These are shown in Fig. 8.3. It is not clear how these subemirates originally evolved except that they reflect traditional tribal loyalties centred on places that served as a market place for various tribes. Therefore each of the six subemirates in the subregion has a recognized centre which have increased in importance in recent years as the subregion has developed. These subemirates were defined administratively as the subregion of Sarat Abidah in 1983 by the Asir Emirate, the Ministry of Planning and the Ministry of Municipal and Rural Affairs. Unfortunately in some places these administrative areas do not reflect the realities of either the physiography or the present settlement and communication patterns, or the socio-economic conditions of the population. For example, two of the subemirates - Alharajah and Aljawwah - lie across the escarpment and include mountain area where most of their population is located. Both have their subemirate centre in the mountains but include land in the Tihama. There are few good road links between the two areas making administration of each subemirate from its centre difficult.

Local administration is also complicated by the fact that there are two separate administrative hierarchies at the local level. These coincide little in their areas of control. Each subemirate is administered by a governor (emir) and his staff. His role is mainly concerned with internal security affairs and he reports directly to the provincial governor of Asir in Abha city. The local emirs have no direct role in the formulation of local socio-

economic policy. This is settled by the relevant ministry departments in Riyadh and Abha although local emirs can try to persuade government to favor their areas for development.

When it comes to the local provision and administration of services, most decisions are made in the ministry branch offices in Abha, the provincial capital, or by the central ministry offices in Riyadh. But for these purposes there is little coincidence in the administrative areas defined by each ministry. For instance the health services in Alharajah and Alfayed subemirates are administered by the ministry's local health office in the district of Dhahran Aljanub (south of the study area), whereas the subemirates of Sarat Abidah, Alfarashah, Aljawwah and Alarquayn are controlled by the health office of Abha. The girls' education authority also divides the study area into two parts with Sarat Abidah, Alfarashah, Aljawwah and Alarquayn areas administered from an office in Sarat Abidah town, whereas the areas of Alharajah and Alfayed are, like the health services, administered from an office in Dhahran Aljanub along with other areas to the south. The ministry controlling boys' education has an office in Sarat Abidah town, but its area covers not only the subregion under study but also Dhahran Aljanub district to the south and a large part of Khamis Mushayt area to the north. That is, the present administrative areas little reflect the subemirate groupings because the subemirates groupings evolved from past tribal affiliation whereas the ministries needed to aggregate large areas for administrrative convenience.

This lack of common administrative unit is a clear obstacle to proper development planning since there is no basis upon which a coordinated set of priorities for different areas or clusters of villages can be established when areas are included in different administrative units

for various government services.

9.4 VILLAGES AND THEIR SERVICES

It has been mentioned that the study area is characterized by a large number of mainly small farm villages and hamlets, ranging in size from a few households in the smallest hamlets up to several hundred people in the larger villages. The provision of basic services in such a rural society presents many problems. While there are more than 10,000 villages in the whole kingdom, there has been no separate national plan for village development. As was indicated in chapter three, the aims, policies and programmes of the national five year plans do not lay down a clear path for the development of the village sector of society. Apart from some designated village clusters, there is no recognized system of local government encompassing the provision of services and other forms of village development, although the next chapter will consider the limited progress made in municipal development in the subregion.

In the past each village, however small, would have its own mosque, but it would normally have no other services. Even after several years of service expansion most village still lack even basic services. For example, of the 407 villages in the subregion in 1987 only 64 had primary schools for boys. Deciding where to locate schools, clinics and other services to best meet the needs of the maximum number of people at reasonable cost becomes a difficult problem in efficient resource allocation.

Because few individual villages have a large enough population in the study area to support a clinic or school, these have had to be provided to serve groups of villages.

But services have not normally been provided in one central village to serve those around it by developing a series of "key" villages. Rather services have been dispersed between groups of villages. As an example of this Fig. 9.4 shows the distribution of services in the group of villages in part of Bani Bishr area just south of Sarat Abidah town. It can be seen that the boys' elementary school for the area was located beside the road linking the four villages of Aldrab, Alswrah, Aljahamah and Quhym to the three villages of Alsabat, Alfrahan and Aldhahr. As a result all students had to make a journey of at least two km to the school. Boys from the village of Alnamr, some eight km away by road, are also in the school's catchment. While the school is not located in any of the villages, in some ways its location is geographically more central than that of the girls' elementary school which is closer to the first group of four villages but leaves girls in all the other villages with a much longer journey to school. The health centre and the boys' secondary school have also been sited at a point nearer to the three villages of Alsabat, Alfrahan and Aldahr in the south of the area. But both facilities serve all these villages and other villages off the map. At the same time Fig. 9.4 shows that there are only six shops to serve the villages and the passing traffic from other villages. Three of them and the gas supply depot are located on the road junction between Alnamr and Alsabat villages, and the other three shops are also located three km away on the main highway in Alsabat village. That is, there appears to be no central village where all services are being located.

Because of the dispersed locations of these services, it is possible to argue that not all of these services can be well located for their catchment populations. A simple way of assessing the effectiveness of each service location is

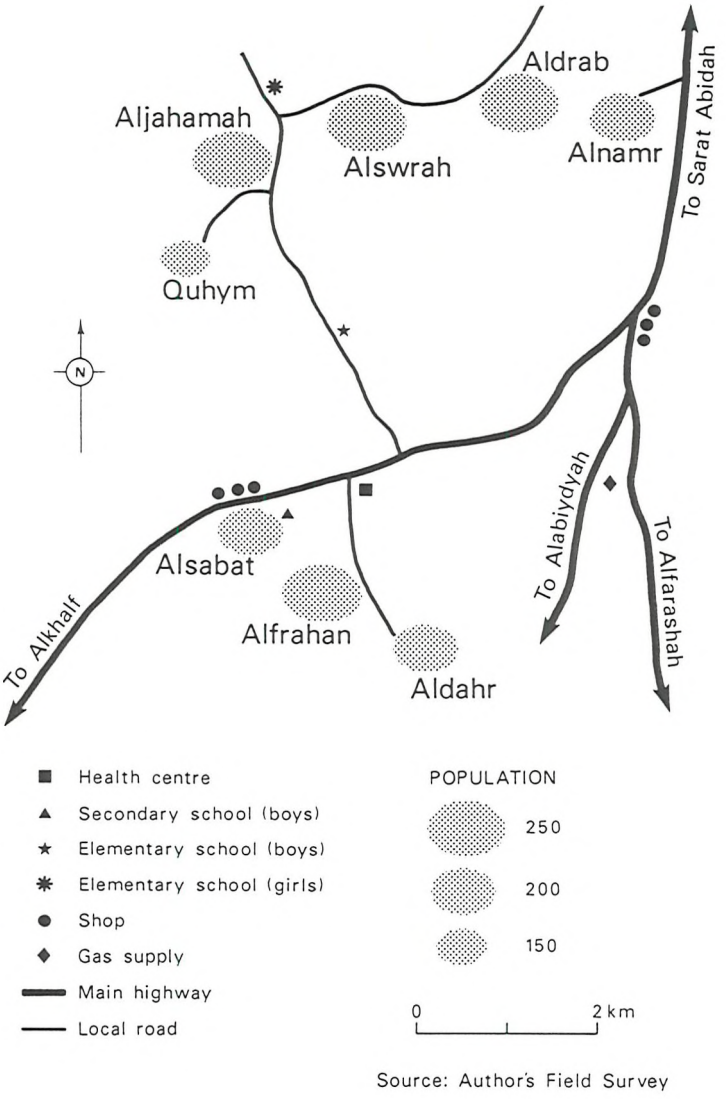

Figure 9.4 The distribution of services in part of Sabat Bani Bishr area in the mountain zone

to calculate the total travel distance required of each village population to reach each service. For example, Aljahamah village, with about 250 persons, is two km distant from the boys' elementary school. If one assumes the village population is a measure of its student population, this would require that community to travel a total of 500 km to reach that school. By applying this method to all of the villages in the catchment area for each of these services, it could be concluded that the boys' elementary school is more effectively located than the other services in relation to the villages shown in Fig. 9.4. The total travel distance for all the village populations to reach the boys' elementary school is 6,775 km compared with 7,325 km for the same populations to reach the girls' primary school. As well as that, individual maximum distances that boy students have to travel to school for certain villages is less than for the girls.

It is not possible to make the same calculation for the health centre and the boys' secondary school because those also serve villages up to 25 km away not shown on Fig. 9.4. In fact Alsabat village was chosen by the villagers in the area to be the centre point for these services, and any other future services, because of its good central location. It also used to be the weekly market place for those villages so that this is a case of a traditional centre retaining its importance.

While the above example suggests the idea of key villages has only been partially applied, officials of the Asir Emirate and the General Directorate of Municipal and Rural Affairs in the region strongly favour the provision of village services at selected villages. These can act as the focus for a number of villages, instead of attempting to disperse facilities around a group of villages in response

to many conflicting local pressures. In this way other services might be attracted to these key villages and a whole group of villages might then be better served. As the Governor of Asir (H.R.H. Prince Khaled Al Faisal) has noted of the problems of providing services to the large number of communities in Asir:

> "We have a situation that is unique for Saudi Arabia. It is a problem when you have this number of villages. Some of them are only five houses. It is almost impossible to provide the full array of services for each one of them". (Landers, 1980, p. 35).

One reason why a key village concept has not been properly applied is that none of the government ministries has developed a policy on the level of services that should be provided in villages of different sizes. Only the Deputy Ministry For Rural Affairs, which is responsible for providing villages with basic facilities and services such as asphalting streets, street lights, construction of markets and the collection of refuse, has classified villages on their potential provision for services. Selected groups of villages will be organized into village "clusters" for which basic services are then provided. But at present there is only one village cluster defined in the subregion, based on Alharajah village to complement the urban based municipality centred on Sarat Abidah town. Neither municipality area has yet be effectively defined, as the next chapter of this study shows. The ministries responsible for the provision of education, health and other community services do not follow this pattern of identifying what services should be provided to a group of villages and then selecting sites for thoses services. But with the very limited information available on the villages, on their growth prospects and catchments, the lack of such a policy, is not surprising.

As part of his fieldwork the author has located all services provided for villages in this study area. Table 9.2 lists the 70 villages in the study area with their approximate population which have services, to assess the pattern of provision in 1987. This leaves 337 villages without any services. The villages with services have been ranked according to the number of public services they possess. No allowance has been made at this first stage for the relative importance of different services.

One might expect some relationship between the number of services in a village and the size of its population. However, this is not often the case except that the town of Sarat Abidah is clearly the main centre. It has 26 public services, no less than 232 shops and a population now (1987) of about 4,500. This is about three times the population of the next largest settlement, Alfarashah which has only nine public services and nine shops. For the rest of the list as well, there is no clear rank-size relationship. The village of Alharajah, for example, has most of the seventeen listed public services and 96 shops but only has about 530 inhabitants. In contrast there are villages with much larger populations but with only one or two services, and in some cases with no services at all. The reasons for this are that many villages are relatively close together and service catchments generally cover several neighbouring villages rather than just the village where the service is located. Also government ministries have often located services at intermediate points, as just illustrated, between clusters of villages in order to serve as many as possible and to avoid village jealousies over chosen sites.

It appears then that one has a four fold pattern of centres: three natural centres, Sarat Abidah, Alharajah and Alfarashah with large numbers of both public and commercial

Table: 9.2

The distribution of existing services by villages in the Subregion, 1987. *

Code in Fig. 9.5	Settlement	Pop.	Education, Services						Health		Other Public Services									Total Pub.	Commercial Services			
			Prim.		Interm.		Second.																	
			B	G	B	G	B	G	HC	H	E	M	VC	C	PS	FS	TP	TG	P	Serv.	B	SH	WM	FUS
1	Sarat Abidah	4500	1	1	1	1	1	1	1	1*	1	1	-	1	1	1	1	1	1	16	2	232	1	7
2	Alharajah	530	1	1	1	1	1	-	1	-	1	-	1	1	1	-	1*	-	1	12	-	96	1	4
3	Alfarashah	1600	1	1	1	-	-	-	1	-	1	-	-	1	1	-	-	1	1	9	-	9	1	1
4	Alfayed	650	1	1	1	1	-	-	1	-	1	-	-	1	1	-	-	-	1	9	-	3	-	-
5	Alarquayn	580	1	1	1	-	-	-	1	-	1	-	-	1	1	-	-	-	1	8	-	3	-	1
6	Aljawwah	1300	1	1	-	-	-	-	1	-	1	-	-	1	1	-	-	-	1	7	-	3	-	-
7	Alasran	1050	1	1	1	1	-	-	1	-	-	-	-	-	-	-	1	-	1	7	-	12	-	1
8	Jwof Almamer	470	1	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	1	5	-	3	-	1
9	Alrofghah	580	1	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	5	-	1	-	-
10	Alawran	320	1	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	4	-	-
11	Alkolah	450	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	3	-	1
12	Alabidiyah	650	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	2	-	-
13	Alkhalf	850	1	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	1	-	-
14	Alwahabah	930	1	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-
15	Alkhrshan	220	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	2	-	-
16	Zuhrah	720	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-
17	Aljafiyl	520	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	-	2	-	-
18	Alsaladin	350	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	-	2	1	-
19	Alhijali	560	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	-	1	-	-
20	Alarq	180	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
21	Almnadiyh	285	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
22	Wadi Alhayah	750	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	3	-	2	1	-
23	Albasam	412	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	1	-	1
24	Sabat B. B.	380	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	2	-	3	-	-
25	Almajma	470	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-
26	Alzawiyh	300	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
27	Dramah	350	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
28	Aljahmah	250	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
29	Othman	580	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
30	Alsahn	180	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
31	Alaiys	470	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
32	Aljzah	460	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
33	Almoftah	700	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-
34	Alwasad	190	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	1
35	Almanqah	460	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
36	Alabs	200	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
37	Algrwat	280	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
38	Alblhi	280	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
39	Aljldah	411	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
40	Almhazmah	350	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
41	Alqran	300	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
42	Alhamri	360	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-

Table 9.2 (continued)

Code in Fig. 9.5	Settlement	Pop.	Education Services						Health		Other Public Services									Total Pub.	Commercial Services			
			Prim.		Interm.		Second.		HC	H	E	M	VC	C	PS	FS	TP	TG	P	Serv.	B	SH	WM	FUS
			B	G	B	G	B	G																
43	Aldhalim	250	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
44	Alomran	350	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
45	Alaqiyq	280	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
46	Alarabah	450	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
47	Alqwsha	230	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
48	Alhrmlh	270	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
49	Radwm	700	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-
50	Alnaiyr	450	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
51	Anqar	400	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
52	Adiyn	360	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
53	Alaiynah	180	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
54	Alghwal	300	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
55	Alhiyd	190	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
56	Tyh Mastwrh	300	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
57	Almatiyh	450	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
58	Althafrah	570	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
59	Alhasin	260	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
60	Alashah	210	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
61	Alhariyqah	230	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
62	A. Aziyzah	250	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
63	Dahr	230	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
64	Alhadyrah	250	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
65	Hmran	180	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
66	Alkhnaqah	175	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
67	Byr Alqasab	120	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
68	Bshran	160	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
69	Almnadiyh	360	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
70	Aldshan	150	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
-	TOTAL	-	64	37	17	5	5	1	23	1*	7	1	1	6	6	1	3	2	8	188	2	387	6	18

Note: * Under construction.
Abbreviations: Education services, B: boys' school, G : girls' school.
Health Services, HC: health centre, H: hospital.
Other Public Services, E: subemirate office, M: municipality office,
VC: village cluster office, C: court, PS: police station, FS: fire station,
TP: telephone service, TG: telegraph service, P: post office.
Commercial Services, B: bank, SH: shop, WM: weekly market, FUS: fuel station.

Source: Author's Fieldwork, 1987.

services, exceeding the needs of their population because they act as district centres. Secondly, one has other villages, some with quite large populations, but with few services. These include several places listed in Table 9.2. Thirdly, one has a scatter of public services between villages to better serve a multi village catchment and not really attached to any one village. Fourthly, one has other villages with several public services but few or no commercial services.

From Table 9.2 it is clear that several of the villages with a bigger range of public services, but few shops, were also traditional villages of tribal leaders. These include Alfarashah, Alfayed, Aljawwah, Alasran, Alarquayn and Jwof Almamer. Four of these centres are also subemirate centres. These have gained public services because their leaders could influence government to favour them but they have not had sufficient accessibility to become commercial centres. Sarat Abidah town and Alharajah are the exceptions as tribal centres which have become clear market centre nodes as well as centres for public services.

Further analysis of Table 9.2 shows that the most widespread service is the boys' elementary school which is found in 64 of the 70 villages listed.* In fact 27 of the listed villages have a boys' elementary school as their only service function. Even so this means that only 16 percent of all settlements in the study area have a boys' primary school. Seventeen, or 4 percent of all villages, have intermediate schools for boys' and five villages have boys' secondary schools. 37 villages or 9 percent of villages have

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* There are 77 boys' elementary schools in the area, but thirteen schools cannot be identified as sited in or beside a village because they are located in open country. Most of these are in the Tihama to serve the nomadic population.

girls' primary schools, and five have girls' intermediate schools. Only Sarat Abidah town has a girls' secondary school. Health clinics are found in 23, or 6 percent, of the villages.

The other government services such as emirate offices, courts of justice, police station, public telephone kiosks and post offices are largely concentrated in the six subemirate centres namely, Sarat Abidah, Alharajah, Alfarashah, Alfayed, Aljawwah and Alarquayn, where they serve many other settlements around them. These six places can be considered as key villages also because of the wider range of services they possess compared with other villages in the study area. Even so it has already been noted that three of them - Alfayed, Aljawwah and Alarquayn - have few shops and are little better served than several other villages in the list. Alasran which is not a designated subemirate centre actually has more population and shops than three of the designated centres. It is clearly only Sarat Abidah town, Alharajah and possibly Alfarashah that distinguish themselves at the top of the hierarchy. They benefit from a central location, a strong shopping base and a centre selected for public service provision. All of the other central places lack at least one of these attributes.

It is also interesting to note that the pattern of commercial services (shops, fuel stations and weekly markets) is much more concentrated than that for public services. Only 23 of the 70 places listed with services in Table 9.2 had commercial services. This is only 6 percent of all villages in the study area. In this respect nowhere compares with Sarat Abidah town and Alharajah. Of the 387 shops found in the area, more than 85 percent of them are in Sarat Abidah (60 percent) and Alharajah (25 percent). Most of the shops in the study area and all the fuel stations are

found along or very close to the main Abha-Najran highway, either located in the settlements on the highway or at road junctions a few km from the villages. While these roadside shops and petrol stations were attributed to the nearest village to them in Table 9.2 most of them rely as much on passing trade from the highway as on trade from many surrounding settlements.

A summary of the pattern that emerges from this analysis is provided by Fig. 9.5, in which villages have been classified into four groups according to the number of public services they have. Sarat Abidah town is the only top level centre possessing all the listed functions and with a large number and wide range of commercial services. With the largest population of any settlement in the subregion it is clearly the subregional centre and is probably growing faster than other central places.

The six villages of Alharajah, Alfarashah, Alfayed, Aljawwah, Alarquayn and Alasran form second order centres with seven to twelve public services. Of these Alharajah stands out as much more of a commercial centre. All of these, except Alasran, are subemirate centres and could therefore be expected traditionaly to exert an influence over a number of surrounding villages. That influence has been reinforced in recent years by the range of services they now have although only Alharajah and Alfarashah have yet really developed these. Alasran village is different from the others because it is not a subemirate centre and it has no subemirate office. Nor does it have a police station or court. But it has first and intermediate level schools for both boys and girls, a post office and a health centre. It is also the only place apart from Sarat Abidah to possess a telephone service, being on the main telephone line from Sarat Abidah to Abha. Although it is not a subemirate centre

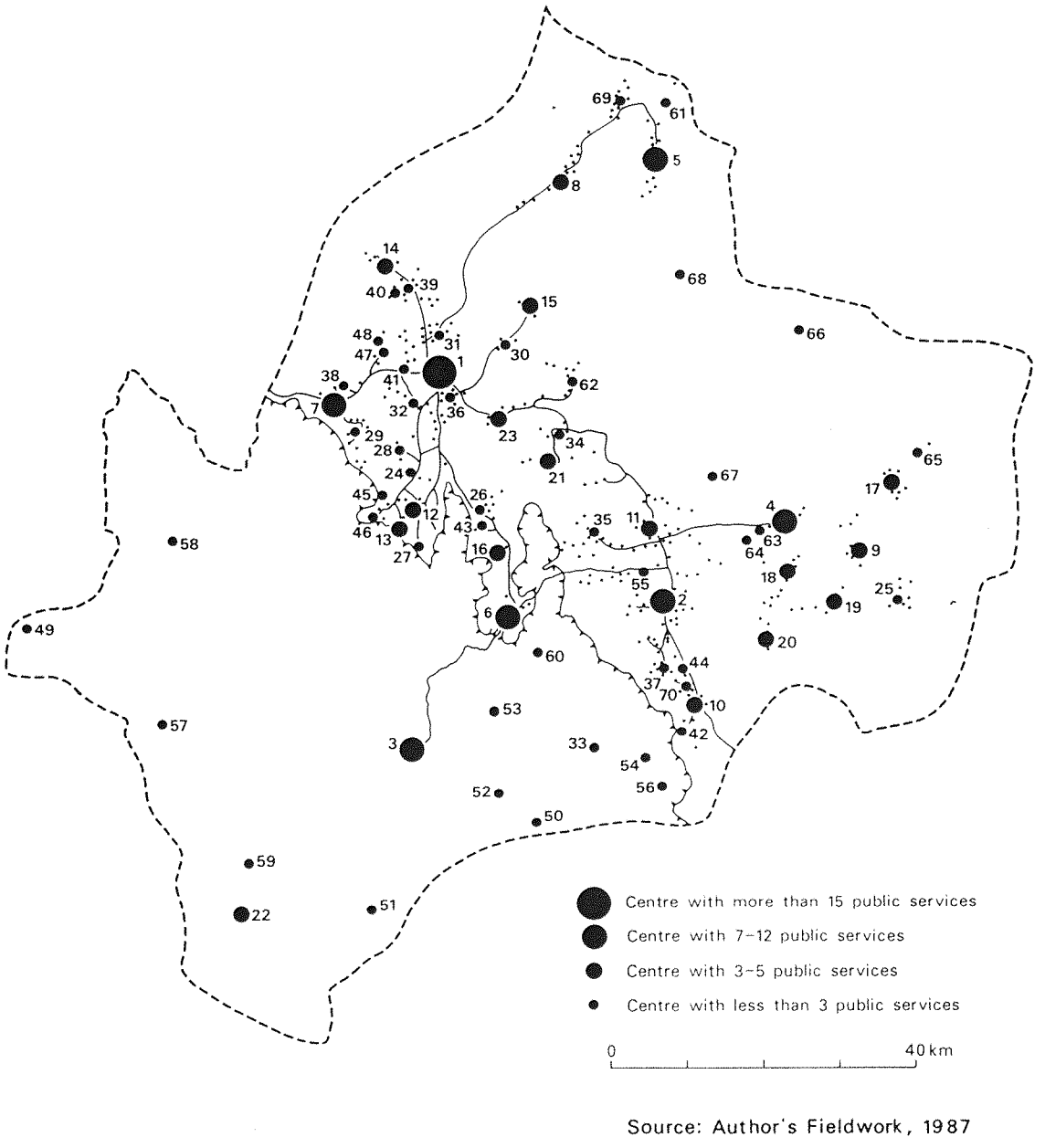


Figure 9.5 Village functional hierarchy based on Table 9.2

Alasran's importance is partly due to its size (1,050 inhabitants) and because it is the home village of the Shaykh Al Shaml, a strong subtribe of the Bani Bishr tribe.

Sixteen other villages have three to five public services and act as minor centres locally. In all cases these services include a boys' elementary school and in all but one a girls' elementary school as well. The majority also have an intermediate school for boys. Twelve of the sixteen have a health centre, but have few other services beyond a shop or two.

47 villages fall into the final class with only one or two public services. 32 of them only possess one service, either a boys' or a girls' primary school, but several of them offer both. A few have other services like a clinic. Only six of them contain shops or a petrol station. One village, Sabat Bani Bishr, falls uneasily within this group in that it has a large clinic and a boys' secondary school, but because it has no elementary schools it has only two public services. It also has three shops, more than any other villages in this group and equivalent in this way to more important villages. Finally, there are the 337 villages not listed in Table 9.2 because they have no services at all.

This ranking of villages according to the number of public services they have has made no allowance for the relative importance of these services. Thus it could be argued that, for example, a secondary school is a more important central function than a primary school, or that a hospital is more important than a health centre. Therefore, one way of assessing the relative importance of different services is to award each service a score weighted by the number of times that service is found in the study area. For example, there are 64 boys' elementary schools in the area,

so that one of those schools will earn a village 1.56 points, calculated as follows: 1/64 x 100 = 1.56. On this basis all of the villages with services were awarded scores according to the scarcity of these services to create a new hierarchy shown in Table 9.3.

The main value of this Table is to confirm the hierarchy of centres already outlined. The Table also shows for comparison the number of services and the rank order derived from Table 9.2. It can be seen that under this weighted system the dominance of Sarat Abidah town is confirmed. It has the highest score of 761.4 and a total of 258 services, making it the clear first order centre in the subregion. The second largest functional centre is Alharajah village with 260.8 points from its 113 services. It is classed here as a second order centre like the villages of Alfarashah, Alfayed, Alasran, Alarquayn and Aljawwah which have between ten to twenty services and 70 to 150 points each, although Alharajah gains many more points because of its large number of stores. 22 villages form a third group of centres with a points score of 15 to 41 and two to nine services. Some of these villages possess important services a like secondary school and health centre as well as shops. The majority of the remaining 41 villages with some central function have either a boys' or a girls' primary school or both and broadly correspond to the 47 villages in the lowest category in Fig. 9.5.

9.5 VILLAGES AND THEIR CENTRAL PLACES

The previous section has attempted to demonstrate that a service centre hierarchy does exist in the study area. But it is clear that the level of village services bears little relationship to the population sizes of villages. Some

Table: 9.3

Hierarchy of villages by the relative importance of services they possess.

Rank order	Settlement	No. of services	No. of points	Rank in Table 9.2
1	Sarat Abidah	258	761.42	1
2	Alharajah	113	260.77	2
3	Alfarashah	20	149.04	3
4	Alfayed	12	95.33	4
5	Alasran	20	88.86	7
6	Alarquayn	12	80.88	5
7	Aljawwah	10	69.45	6
8	Jwof Almamer	9	40.78	8
9	Wadi Alhayah	6	37.34	21
10	Alrofghah	6	34.73	9
11	Alabidiyah	6	30.64	12
12	Aljafiyl	6	25.76	17
13	Sabat Bani B.	5	25.59	24
14	Alkhrshan	4	21.10	15
15	Alkolah	8	20.78	11
16	Radwm	2	18.22	49
17	Albasam	5	15.94	23
18	Alawran	8	15.48	10
19	Alkhalf	5	14.73	13
20	Alwahabah	4	14.48	14
21	Zuhrah	5	10.64	16
22	Alarq	3	10.14	20
23	Alwasad	4	10.06	34
24	Alsaladin	4	8.85	18
25	Alhjali	3	8.60	19
26	Alanadiyah	3	8.60	21
27	Alaiys	2	7.44	31
28	Almoftah	4	6.40	33
29	Almajma	3	6.15	25
30	Aldhalim	1	4.34	43
31	Alzawiyh	2	4.26	26
32	Dramah	2	4.26	27
33	Aljahmah	2	4.26	28
34	Othman	2	4.26	29
35	Alsahn	2	4.26	30
36	Aljzah	2	4.26	32
37	Almanqah	2	4.26	35
38	Alabs	2	4.26	36
39	Alqrwat	2	4.26	37
40	Alblhi	2	4.26	38
41	Aljldah	1	2.70	39
42	Alhamri	1	2.70	42
43	Alhrmlh	1	2.70	48
44	Aldshan	1	2.70	70
45	Almhazmah	1	1.56	40
46	Alqran	1	1.56	41
47	Alomean	1	1.56	44
48	Alaqiyq	1	1.56	45
49	Alarabh	1	1.56	46
50	Alqwshah	1	1.56	47
51	Alnaiyr	1	1.56	50
52	Angar	1	1.56	51
53	Adiyn	1	1.56	52
54	Alaiynah	1	1.56	53
55	Alghwal	1	1.56	54
56	Ahiyd	1	1.56	55
57	Tyh Mastwrh	1	1.56	56
58	Almatiyh	1	1.56	57
59	Althafrah	1	1.56	58
60	Alhasin	1	1.56	59
61	Alashah	1	1.56	60
62	Alhariyqah	1	1.56	61
63	Alabo Aziyzah	1	1.56	62
64	Dahr	1	1.56	63
65	Alhadyrh	1	1.56	64
66	Hmran	1	1.56	65
67	Alkhnaqah	1	1.56	66
68	Byr Alqasab	1	1.56	67
69	Bshran	1	1.56	68
70	Almnadiyh	1	1.56	69

villages with quite large populations have fewer services than other villages with fewer inhabitants. While this partly results from tribal and other traditional influences, this lack of relationship partly results also because some small villages have acquired good locational advantages where one service, such as a school, is needed to serve several villages. Recent road improvements have often emphasized these locational advantages.

It is therefore necessary to examine the catchment areas of services rather than the population of the village in which the service is located. Data does not exist in the area on the catchment for various services although the writer in later chapters has attempted to define school and health centre catchments. One step towards defining likely catchments is to look at the pattern of village distribution. The Asir Emirate Study (1983) gives data on the sizes of villages served by the six subemirate centres which really form the main central places in the subregion. Only Alasran is not a subemirate centre among the seven leading centres in the area. Fig. 9.6 shows the location of the six subemirate centres and the villages theoretically served by them. What is also noticeable is the considerable variation in distances of subemirate centres from the villages they are meant to serve. The data source for Fig. 9.6 gives the size classes of villages which are served by each centre and states the approximate distance between each village and its subemirate centre. It has therefore been possible to consider both the overall pattern of distances between villages and their theoretical central place.

Fig. 9.7 graphs the cumulative percentage of all villages in the subregion against distances from their designated central place. It is immediately apparent that most villages lie fairly close to their subemirate centre.

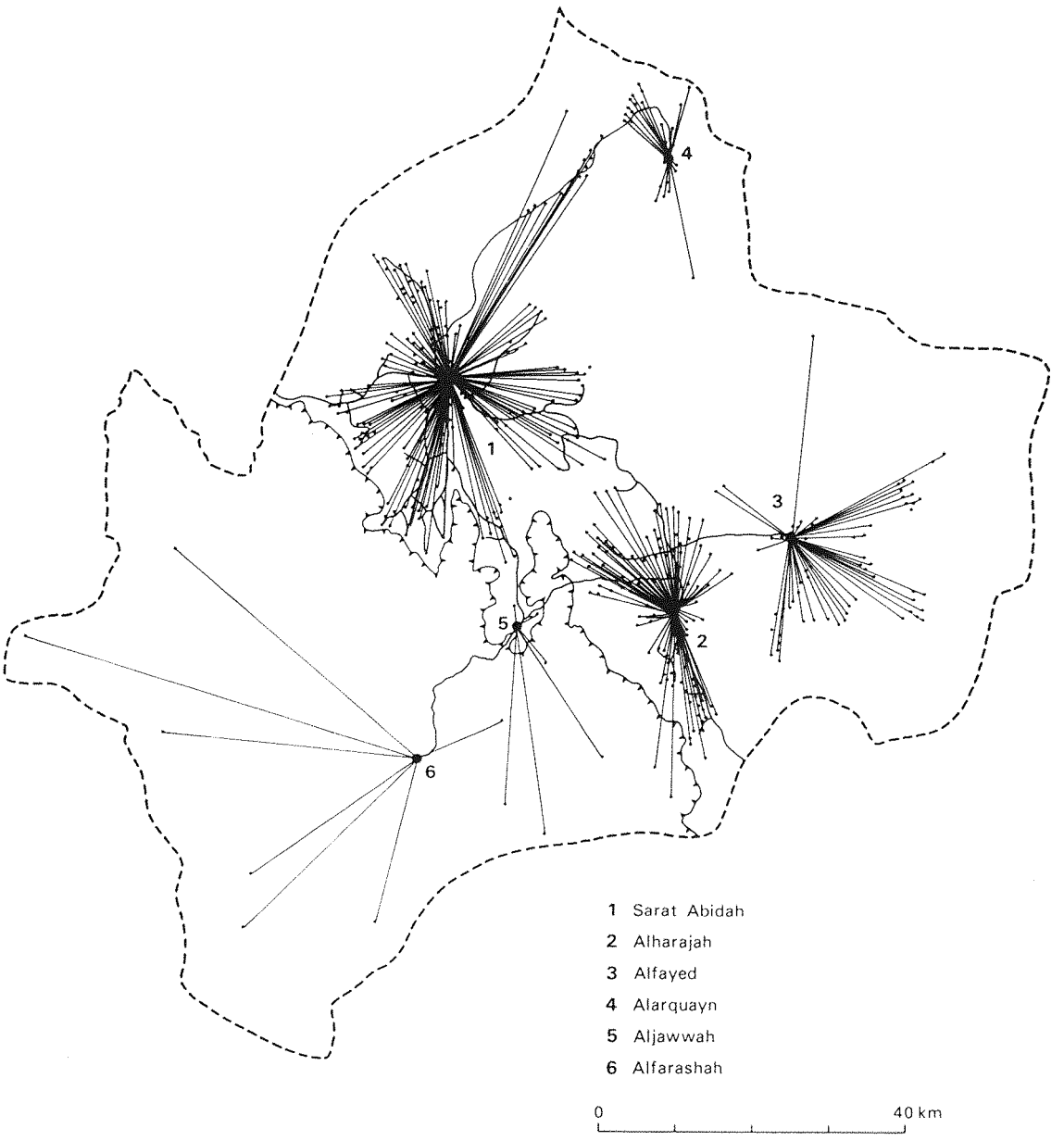
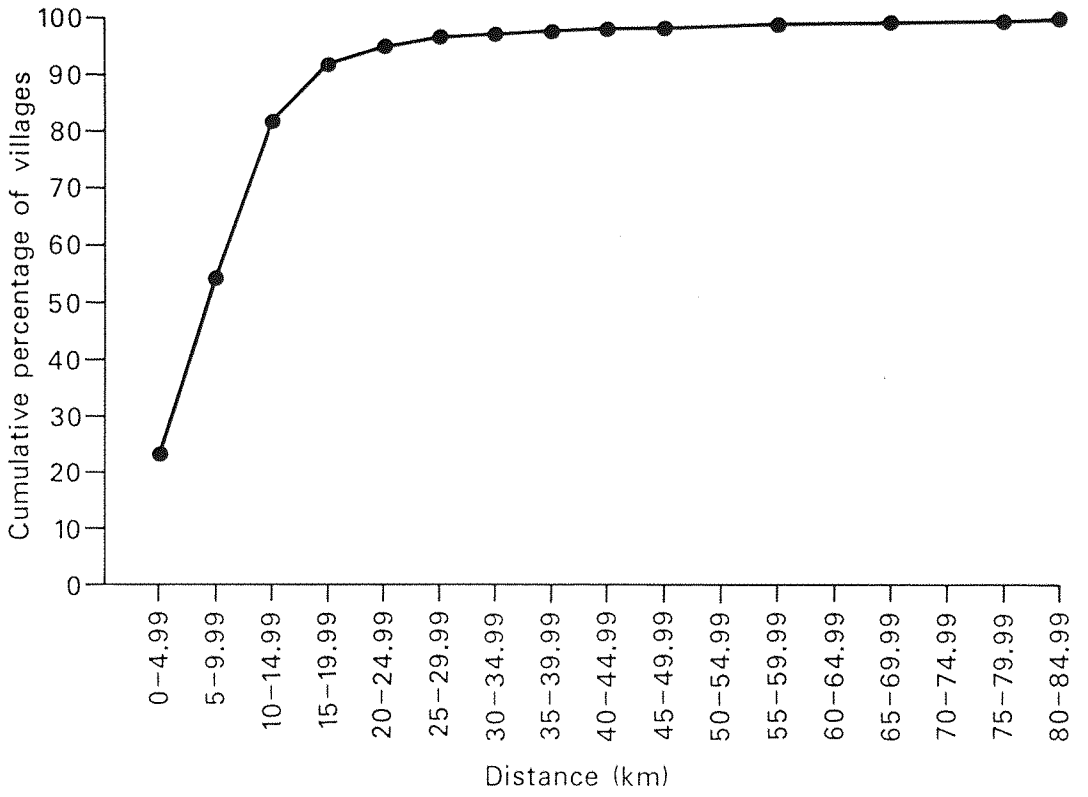


Figure 9.6 Theoretical catchment areas of the six subemirate centres



Data source: Asir Emirate Study, 1983

Figure 9.7 Villages by distance from their subemirate centre in the subregion

Nearly 55 percent lie within ten km and 82 percent within fifteen km. But significant numbers of villages are remote from their subemirate centres. The most remote village is in the Tihama and is no less than 85 km away from its centre at Alfarashah, but in this more empty part of the subregion most of the well scattered villages lie far from their subemirate centre. Yet it is not only in the Tihama that a few villages are remote from their subemirate centres. A few of the villages dependent on Sarat Abidah town, in the most densely settled part of the subregion, are over 30 km away from their centre. Although their numbers are too small to affect the overall pattern, they could represent a more difficult section of the mountain settlement pattern to provide services for.

Considering the pattern of villages around each of the six central place, as shown in Fig. 9.6, it is possible to detect three main types of pattern. These range from the highly dispersed pattern in the Tihama through to strongly clustered village patterns in the north and east of the area. Around Alfarashah its Tihama villages are at an average distance of 56 km away. The average distance of Aljawwah villages is 22 km from their centre. At the other extreme villages around Alfayed and Alarquayn in the north and east are at an average distance of only seven km from their centres. This clustering in the dry highland area results from the existence of villages which string out along the larger wadis. An intermediate type of pattern is characteristic of the main mountain zone where many more settlement sites are available and the average distance between the central places of Sarat Abidah and Alharajah and their villages is eleven km. These average figures can, of course, hide considerable variations around the mean.

Further details can be added to these different patterns

by considering Fig. 9.8 which gives for each subemirate the cumulative percentage of villages at stated distances from their service centre. Both of the service centres in the northern and eastern highland area - Alarquayn and Alfayed - show a significantly higher degree of village clustering around them than for the other groups, as was indicated by their shorter average distance (seven km) between centre and villages. In both cases about half of their dependent villages are no more than five km from their service centre and in the case of Alarquayn 90 percent of its villages lay within ten km. With the greater number (65 villages) of villages dependent on Alfayed compared with Alarquayn (31 villages), its overall pattern is rather less clustered but only one village lay more than twenty km away from Alfayed.

Showing the least degree of clustering, as already indicated by their high average distances between centre and village, are the places in the Tihama around Alfarashah. None of the seven villages dependent on Alfarashah are close to it, only one of them being within 25 km. This is in marked contrast to the situation with the four mountain subemirates where none of the villages are more than 25 km from their service centre. The seven villages around Aljawwah show a pattern of distances intermediate between the very dispersed Tihama pattern and the more clustered mountain pattern. This is because so few villages are involved and because this centre lies on the edge of the escarpment. It therefore has three mountain villages close to it as well as four Tihama villages which are more distant. Three of the seven villages dependent on it are within 25 km of it.

The villages in the mountain zone which are dependent on the two largest centres in the subregion - the 182 villages around Sarat Abidah and the 113 villages around Alharajah -

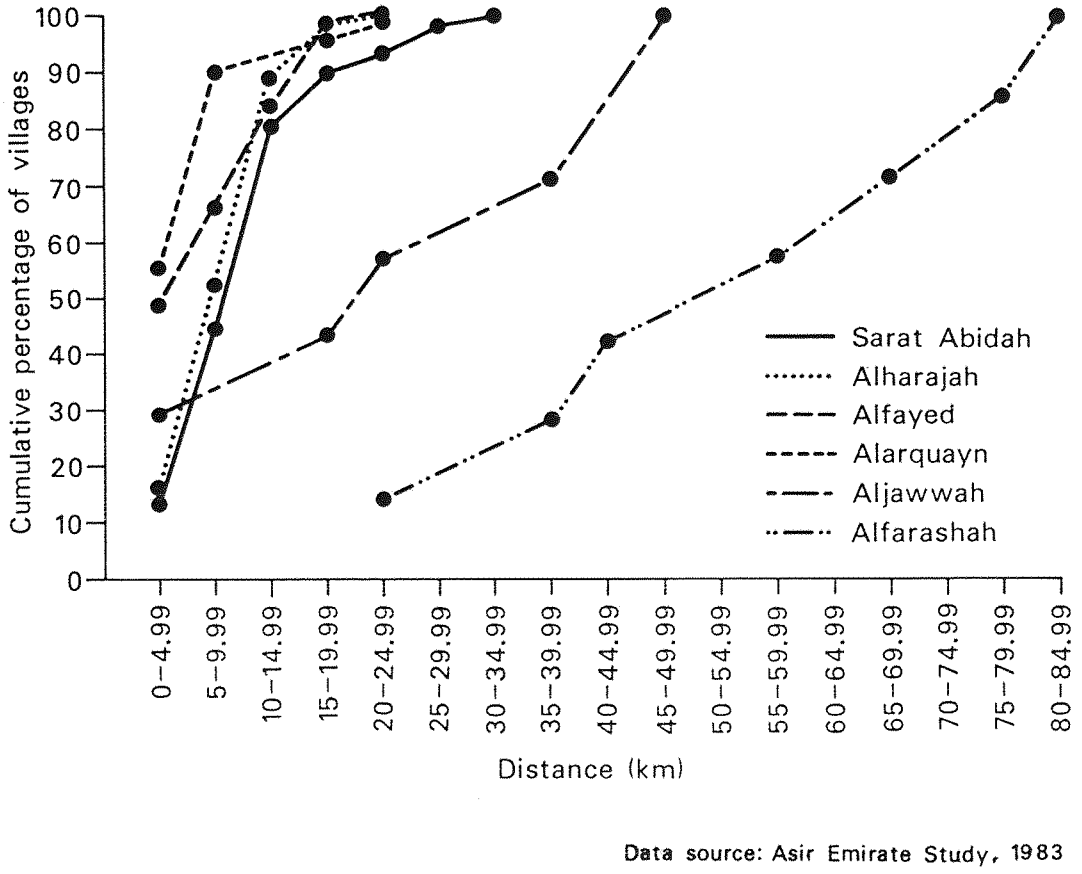


Figure 9.8 Villages by distance in the six subemirates

show considerable degrees of clustering but also a large number of their villages are at a greater distance from each centre. This is almost inevitable in a large, well settled mountainous area which can never be effectively serviced from only two main points. Interestingly, as Fig. 9.8 shows, the proportion of villages at different distances from Alharajah is almost identical to that around Sarat Abidah which has many more villages subservient to it. In both cases about half of the villages are within ten km of their centre, a proportion not much lower than for the villages clustered around the much smaller centres of Alfayed and Alarquayn. But 20 percent of Sarat Abidah's villages are over fifteen km away from it. The proportion of villages more than fifteen km from Alharajah is much smaller at about 11 percent. But in the case of both centres it means that significant numbers of villages are relatively remote from their nearest centres and are therefore difficult to serve from them. It is for this reason that several lower order centres are found in this area, as well as Alasran, the only higher order centre that is not also a subemirate centre. These subsidiary centres provide extra schools and other services close to the many villages that need these services.

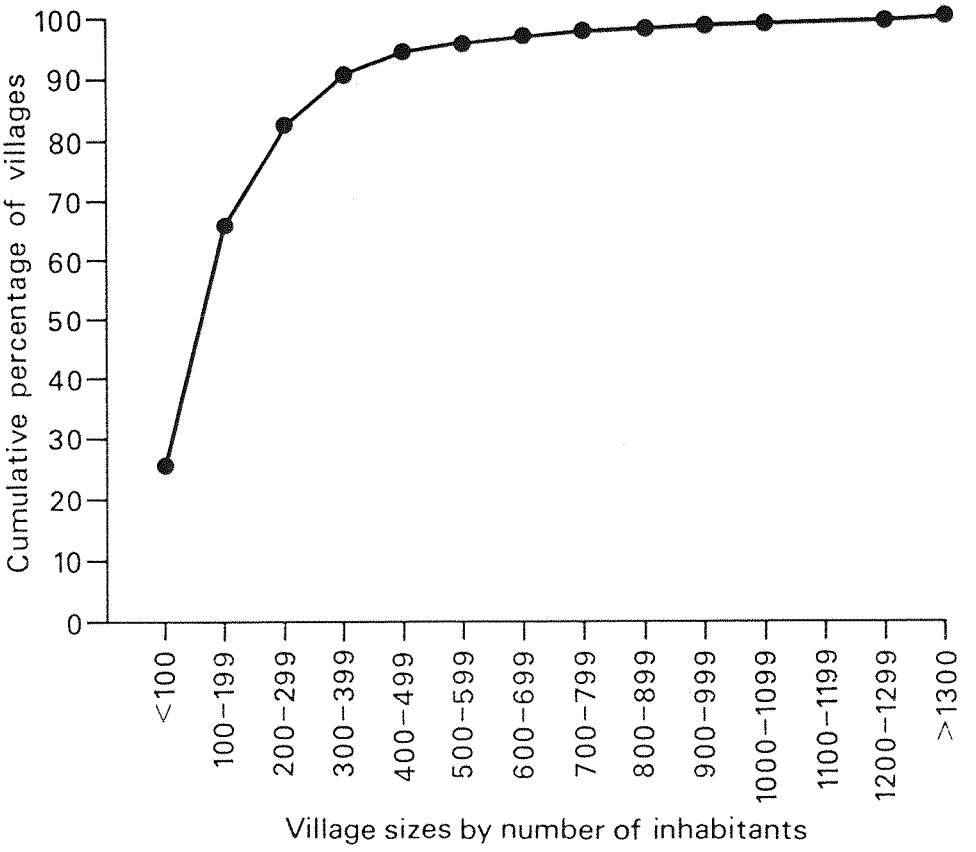
In the case of service provision for these types of settlement pattern the simple matter of distance between outlying villages and their subemirate centre is complicated by several other factors. These include the quality of the road links, the mobility of the population who need to use the services, and the balance of advantages for different services between having larger centralized units in a few centres and smaller units at many scattered points. For example, post offices are fairly centralized functions in the study area appearing in only eight places including the

seven leading service centres, whereas elementary schools are much more widly scattered in order to make them more accessible to young children. None of these factors can be considered at this stage because different services create different locational needs, but the variations in sizes of villages around the six designated centres can be considered here to see if the main patterns of clustering and dispersal so far identified are made up of similar sizes of villages.

Fig. 9.9 shows that the great majority of villages in the subregion are quite small, over 90 percent of them having less than 400 inhabitants. 26 percent have less than 100 inhabitants. Only a very small numbers (15 villages) have more than 600 persons each.

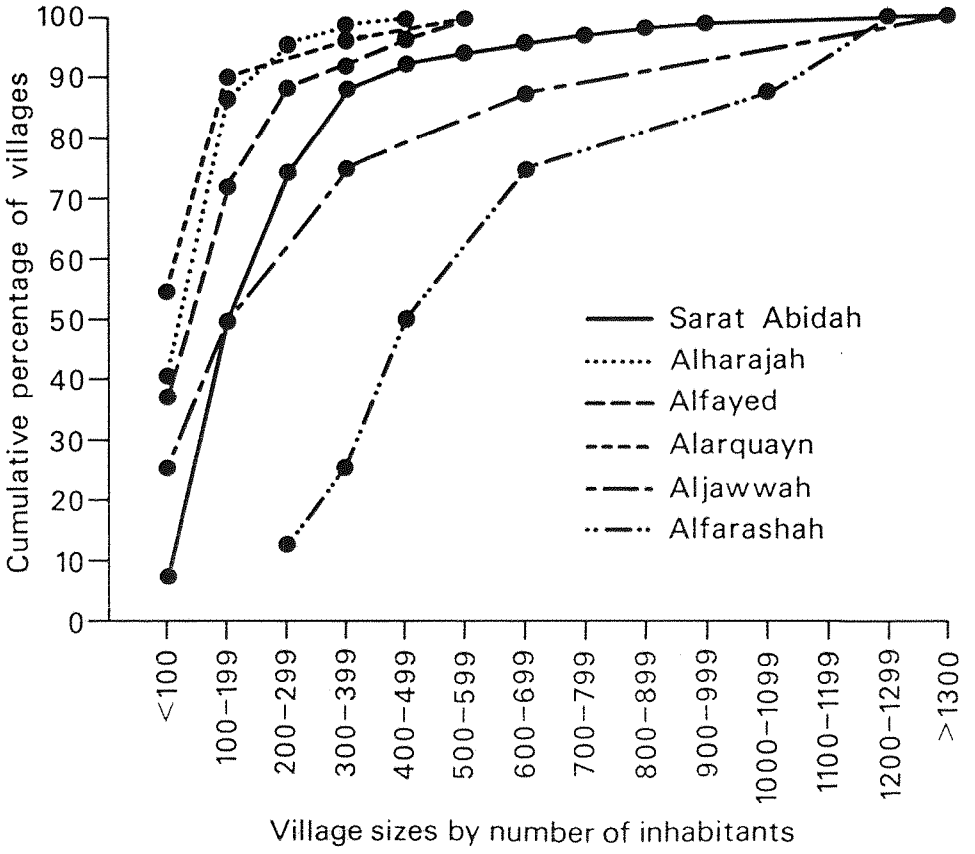
Fig. 9.10 shows the cumulative percentages of villages by population size for each of the six subemirates. It is not difficult to detect some variation in these sizes. Alharajah, Alfayed and Alarquayn subemirates have large proportions of the smallest villages. No less than half of the villages around Alarquayn are smaller than 100 inhabitants each, as also are over 38 percent of the villages around Alharajah and Alfayed. In none of these subemirates are any of the villages larger than 600 inhabitants. In the case of the seven villages around Aljawwah, three were under 200 people each although there were some larger villages as well.

The pattern of village sizes around Sarat Abidah was not too dissimilar with a few very large villages and many of intermediate size. 87 percent of the villages had under 400 inhabitants each but few had under 100 inhabitants each. The pattern of the villages in Alfarashah subemirate is also distinctive with the smallest having over 200 inhabitants and the largest rising above 1200 persons. This pattern of relatively large villages in Alfarashah subemirate reflects



Data source: Asir Emirate Study, 1983

Figure 9.9 Village sizes in the study area



Data source: Asir Emirate Study, 1983

Figure 9.10 Village sizes in the six subemirates

the tendency for the nomadic population to gather at a few favoured spots which are also well dispersed from each other.

It is clear from this that the pattern of village sizes differs between the subemirates but it is not a simple relationship to the physical zones they are located in. Nor is it a simple relationship to the number of villages dependent on each centre. Alarquayn and Alfayed in the dry north and east, with a few villages compactly clustered around them, are largely characterised by very small villages, but Alfayed has rather more larger villages amongst its much larger cluster. The settlements in Alharajah subemirate are also characterised by mainly very small mountain villages whereas its more important counterpart centre to the north, Sarat Abidah town, has a greater variety of village size above the very smallest in its subemirate. Similarly there are differences between the villages around the remaining two centres. Those around Aljawwah are predominantly smaller than those around Alfarashah. Alfarashah's villages are typical of the Tihama pattern with well scattered large villages whereas those around Aljawwah are smaller and rather less scattered because not all are in the Tihama area.

Lastly then it is sensible to examine these patterns of village size around each centre in relation to the distances of different sizes of villages from those centres. Table 9.4 gives the percentage of villages of different size classes at various distances from their centres. This shows that there is a tendency for smaller villages, which are less able to support their own services, to lie closer to their designated central villages. But significant numbers of small villages are also found at remote distances in the mountain zone making for difficult choices in the location

of additional rural facilities. But these patterns do vary from area to area.

One can take the case of Alarquayn, a small centre with a cluster of small wadi villages of under 100 inhabitants each around it in the north of the subregion. One can see from Table 9.4 that most of the villages in this subemirate lie within ten km of Alarquayn and may not be too difficult to serve. But the few distant villages, over twenty km away, are also small ones and may be difficult to service since none of them are large enough alone to support schools, clinics and other facilities.

The pattern of villages around Alfayed also in the east is not too dissimilar to the Alarquayn pattern. It has many more villages around it, and more are at a greater distance. Some of these are rather larger villages. Nevertheless most of the smallest villages (with under 100 inhabitants) are very close to the subemirate centre. So are some of the medium sized villages although significant numbers of these are over ten km away. Virtually all of the largest villages, of over 400 persons, are at a greater distance. But some of these may have sufficient population to support their own services rather than just rely on Alfayed for their basic services.

As previously indicated the main mountain zone of settlement, if it was served by only the two designated subemirate centres - Sarat Abidah and Alharajah - presents some of the biggest problems of service location because so many of the villages are liable to be far from these designated centres. This has already been indicated with the large number of villages clustered around Sarat Abidah town. Although there are few very small villages incapable of supporting any services, the many villages with just 200 or 300 inhabitants are widely spread. Many are over ten km from

Table: 9.4

Village size against distance in the Subregion, (percent).

Village size	Distance (km)	Sarat Abidah	Alharajah	Alfayed	Alarquayn	Aljawwah	Alfarashah
< 100	< 5	-	10.5	19.6	32.7	28.6	-
100-199		4.0	4.0	21.5	16.3	-	-
200-299		3.3	0.8	7.8	4.1	-	-
300-399		4.6	-	-	2.0	-	-
400-499		1.3	-	-	-	-	-
<100	5-9.99	4.0	23.4	7.8	24.5	-	-
100-199		9.2	10.5	5.8	10.2	-	-
200-299		9.2	1.6	2.0	-	-	-
300-399		5.3	1.6	-	-	-	-
400-499		3.3	-	-	-	-	-
500-599		-	-	2.0	-	-	-
<100	10-14.99	2.6	16.1	3.9	-	-	-
100-199		13.2	14.5	5.8	-	-	-
200-299		10.5	5.7	3.9	-	-	-
300-399		5.3	0.8	2.0	-	-	-
400-499		2.0	-	2.0	-	-	-
500-599		0.7	-	-	-	-	-
600-699		0.7	-	-	-	-	-
700-799		0.7	-	-	-	-	-
900-999		0.7	-	-	-	-	-
<100	15-19.99	-	2.4	2.0	6.1	-	-
100-199		1.3	5.7	2.0	-	-	-
200-299		2.6	0.8	2.0	-	-	-
300-399		2.6	-	2.0	-	14.3	-
400-499		1.3	-	2.0	-	-	-
500-599		0.7	-	3.9	-	-	-
600-699		0.6	-	-	-	-	-
<100	20-24.99	-	-	-	4.1	-	-
100-199		0.7	1.6	-	-	14.3	-
200-299		0.7	-	-	-	-	-
300-399		0.3	-	-	-	-	-
400-499		-	-	-	-	-	14.3
500-599		0.7	-	2.0	-	-	-
100-199	25-29.99	0.7	-	-	-	-	-
200-299		3.3	-	-	-	-	-
300-399		0.7	-	-	-	-	-
600-699		0.7	-	-	-	-	14.3
200-299	30-34.99	0.7	-	-	-	-	-
300-399		0.7	-	-	-	-	-
300-399	35-39.99	-	-	-	-	14.3	-
400-499		-	-	-	-	-	14.3
300-399	45-49.99	-	-	-	-	14.3	14.3
600-699	55-59.99	-	-	-	-	-	14.3
600-699	65-69.99	-	-	-	-	14.3	-
200-299	75-79.99	-	-	-	-	-	14.3
>1100	80-84.99	-	-	-	-	-	14.3

Source: Based on data from Asir Emirate Study,1983.

Sarat Abidah. Similarly there is a wide scatter of much larger villages with some close to Sarat Abidah but several others over twenty km away. These larger villages offer opportunities, and the need, to site services in the rural areas outside of Sarat Abidah town. But the problem comes in choosing suitable locations among the numbers of villages seeking such services. The other mountain centre, Alharajah, presents the same problem on a smaller scale. It also has a wide range of village sizes around it and these vary greatly in their distances from the centre. Most of the small villages around Alharajah lie within fifteen km of it but some are beyond this. There are a few larger villages, most of which are close to Alharajah.

Alfarashah in the Tihama and Aljawwah on the edge of the Tihama present other problems of service location, not only because of the much greater distances between villages and their subemirate centres, but because these villages vary greatly in size. Whereas some of the most remote villages are of a size large enough to be served by permanent or peripatetic services, this is not likely to be the case for the smaller remote villages. Only one of the villages dependent on Aljawwah, for example, had more than 600 inhabitants. Yet of the six that are smaller than this five lie more than fifteen km from the centre and are likely to be very difficult to service.

In summary then the village pattern in the six subemirate in the study area fall broadly into three pairs: the northeastern, the main mountain zone and the Tihama pairs of subemirates. Each pair of subemirate, is similar although each shows particular features of village size and location in relation to their subemirate centre. One could argue that this grouping of villages around their subemirate centre is largely theoretical. But this chapter has also

shown that those centres form six of the seven higher order service centres, and the seventh centre - Alasran - occurs within Sarat Abidah subemirate where the greatest concentration of villages calls for additional service centres.

9.6 SPATIAL ANALYSIS OF VILLAGES AND SERVICE PROVISION

So far this chapter has considered the villages in the study area largely at a descriptive level in terms of their sizes, their services and the location of tributary villages to their subemirate centres. But little other consideration has been given to the locational pattern of villages in relation to where the services are found. Clearly a study of actual service catchment areas is a further stage of the research and this is reported on later. But at an early stage of the research a more analytical approach to the spatial pattern of the villages and related services was attempted to see if this better revealed how each pattern differed across the area. It was decided to apply quadrat analysis to the village patterns and the patterns of health centres and schools.

Quadrat analysis to measure point patterns has been used by a number of geographers such as Chorley and Haggett (1967), Birch (1967), Pinder and Witherick (1972) and Shaw and Wheeler (1985) as well as other in different disciplines. It can be applied to the measurement of any dispered pattern, either of whole settlements if they are of approximately equal size, or of individual service points such as schools and health centres. For this purpose the study area has been divided into three zones and covered with a grid of equal-sized squares. Fig. 9.11 shows the three zones which have been defined on the basis of their

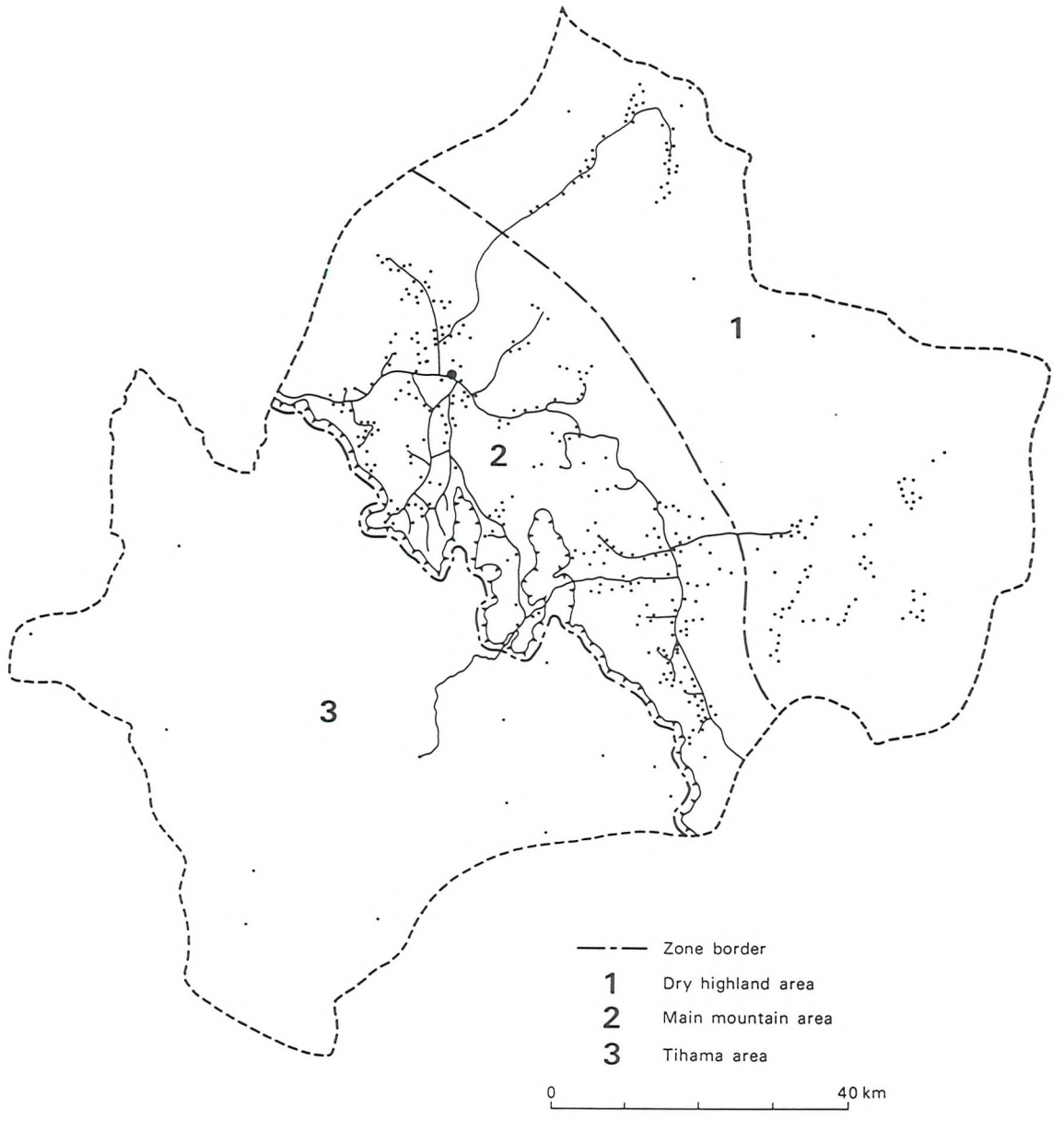


Figure 9.11 The Physical Zones in the subregion

physical status: zone one being the dry highland area in the northern and eastern part of the main mountain area; zone two is the main densely settled mountain zone around Sarat Abidah town and the Alharajah area; zone three is the little settled Tihama below the escarpment in the south and southwest of the subregion.

Many writers have noted that in quadrat analysis the selected size of quadrats can seriously affect the results obtained. A clustered pattern at one size of quadrat can appear more randomly distributed using a different quadrat size. As a result two sizes of quadrat - five and ten square km - were used in the present study as being most suited to the patterns being studied.

With a grid of quadrats placed across the area the number of points, be they whole villages or individual service points like schools, are counted up in each quadrat and a frequency diagram, is constructed. Fig. 9.12 shows the pattern of points obtained using the two quadrat sizes for village settlement distribution. The frequency diagram of village number and the quadrats produced for the whole subregion is shown in Table 9.5.

The mean and variance of each frequency distribution is then calculated. In order to do this for each zone, for each quadrat size, and for each pattern being investigated, a simple computer program was used to speed up the work. Where the ratio of mean/variance is less than 0.5 the pattern indicates strong clustering, whereas a ratio of about 1 indicates a more random pattern and a ratio above 1.5 would suggest a very regular or well dispersed pattern.

The results of this calculation for the pattern of village distributions in the three zones are given in Table 9.6. For the subregion as a whole it can be seen that the pattern is a strongly clustered one at both of the selected

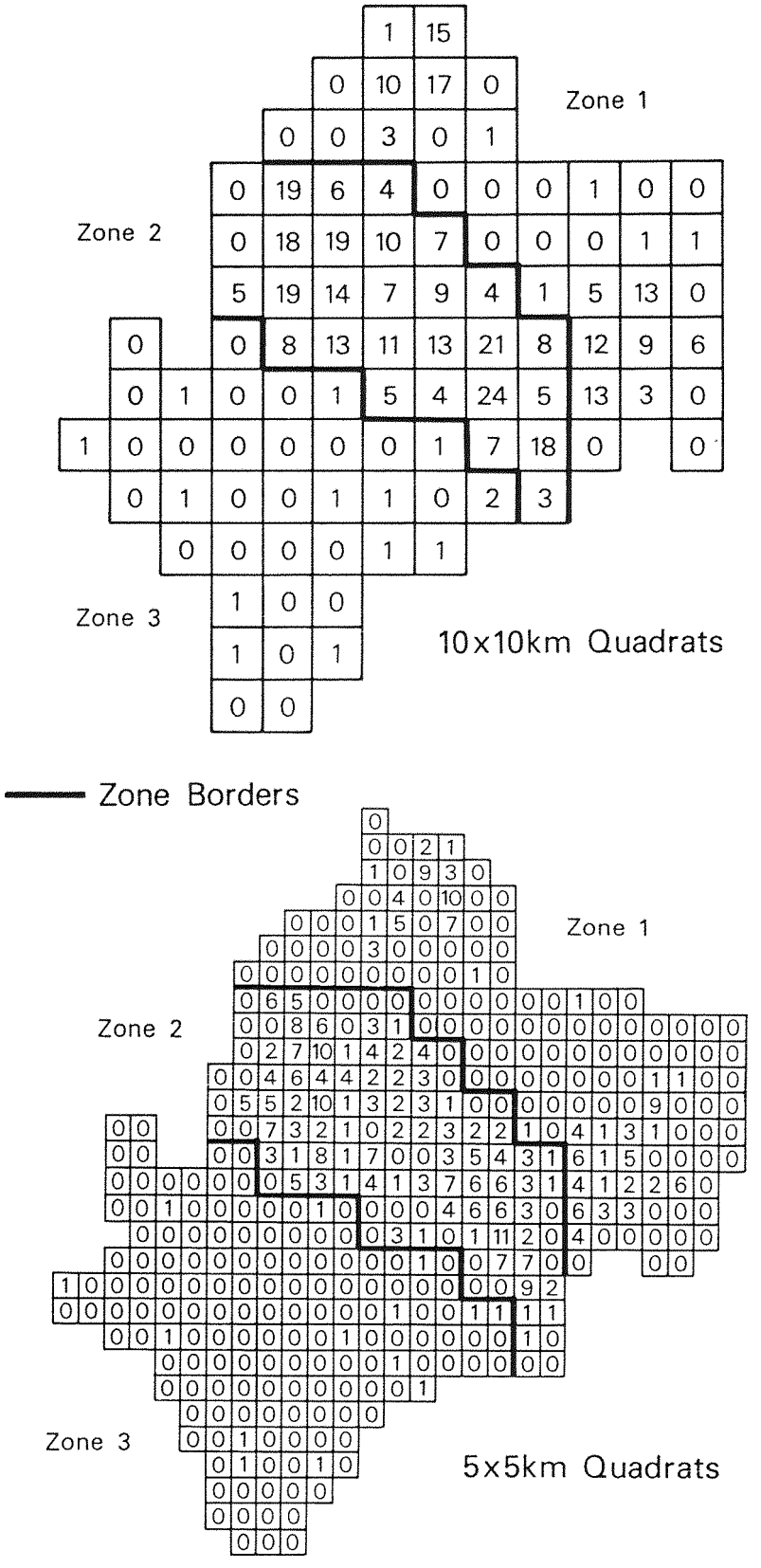


Figure 9.12 Two sizes of quadrats applied in the subregion showing number of villages in each quadrat

Table: 9.5

Method of calculating the mean/variance.

Point/Quadrat	5 x 5 KM Quadrat		10 x 10 KM Quadrat	
	No. of Q	No.of P	No. of Q	No of P
0	280	0	43	0
1	42	42	18	18
2	16	32	1	2
3	19	57	3	9
4	12	48	3	12
5	7	35	4	20
6	10	60	2	12
7	7	49	3	21
8	2	16	2	16
9	3	27	2	18
10	3	30	2	20
11	1	11	1	11
12	-	-	1	12
13	-	-	4	52
14	-	-	1	14
15	-	-	1	15
16	-	-	-	-
17	-	-	1	17
18	-	-	2	36
19	-	-	3	57
20	-	-	-	-
21	-	-	1	21
22	-	-	-	-
23	-	-	-	-
24	-	-	1	24
Total	402*	407	99	407

* The number of 5 x 5 km quadrats is more than four times greater than the number of 10 x 10 km quadrats because some 10 x10 km quadrats largely fall outside of the study and were therefore excluded.

quadrat sizes, particularly at the larger quadrat size. It is also clear that the village pattern is most clustered in zone one (the dry northeast) at both sizes of quadrats where the villages group together in strings along the few large wadis. The main mountain zone of settlement (zone two) where there are many more favourable sites still encourages clustering of villages particularly at the larger size of quadrat. In the largely empty Tihama (zone three) the pattern appears random to well dispersed. There is little variation in the results for the different quadrat sizes although the 10 x 10 km squares seem to bring out the clustering more clearly in zone one and two and the dispersal of villages in zone three.

Table: 9.6

The result of quadrat analysis for villages.

Size of Quadrat	Whole Subregion	Zone one	Zone two	Zone three
5 x 5 km	0.235	0.219	0.346	1.100
10 x10 km	0.112	0.125	0.238	1.308

The same type of analysis was also used on health centres and schools to see if anything could be revealed of their pattern in relation to the village pattern. The actual locations of schools and health centres is considered in detail in later chapters, but reference can be made to their overall patterns here, as shown by quadrat analysis, to compare them to the village patterns. The same quadrat sizes, grids and zones were used and the results are given in Table 9.7 and 9.8. The pattern of health centres shown in Table 9.7 appears to be generally random across the whole study area and in its three zones at both quadrat sizes.

This is probably because there are so few health centres that they are well scattered across the subregion to serve as many villages as possible. In the well settled mountain zone (zone two) a more regularly dispersed pattern is suggested. Here there are more health points to meet the needs of the many villages.

Table: 9.7

The result of quadrat analysis for health centres.

Quadrat sise	Whole Subregion	Zone one	Zone two	Zone three
5 x 5 km	1.060	1.062	1.121	1.019
10 x 10 km	1.170	0.985	1.750	1.088

The result of the analysis of the pattern of schools are given in Table 9.8. Here the schools have been divided between boys and girls and for the three levels of primary, intermediate and secondary. For the most part all of the school patterns come out as random in spite of the considerable variation in the numbers of schools considered under each heading. As there are no schools for girls of intermediate age in zone three or secondary schools for girls in zones one and three these results appear as zero in Table 9.8. With most other scores suggesting a rather random distribution, little more can be read into the small variations seen, although it can be noted that zones two and three have some patterns more regular than random, notably for elementary schools for boys. This is probably because there are rather more of this type of school. They are fairly well distributed within zone two in order to serve as great a proportion of the village populations as possible,

Table: 9.8

The result of quadrat analysis for schools in the Subregion.

Level of School	Size of quadrat (km)	Whole area		Zone one		Zone two		Zone three	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Primary Level	5 x 5	1.06	1.04	1.02	0.06	1.11	1.22	1.17	1.00
	10 x 10	1.03	0.78	0.80	0.99	1.40	1.27	1.47	1.03
Intermediate level	5 x 5	1.04	1.01	1.04	1.01	1.11	1.04	1.01	0
	10 x 10	1.06	1.05	1.17	1.03	1.27	1.17	1.03	0
Secondary level	5 x 5	1.01	1.00	1.01	0	1.03	1.01	0	0
	10 x 10	1.05	1.01	1.06	0	1.12	1.04	0	0

and they are well spread out in the Tihama (zone three) because the villages are also well dispersed.

It can be concluded then that whereas the village patterns are generally more clustered than random, reflecting the site advantages in particular areas, the pattern of health centres and primary schools is more widely, if not regularly, dispersed. This is because of the need for schools and health centres to be located where more of the village populations have some access to them. Clustering of services is less necessary with a clustered pattern of villages because s small number of schools and health centres can serve a large number of closely spaced villages simply by providing larger central facilities rather than by multiplying the number of those service points. Multiplication of service sites would, of course, offer some increased accessibility to these services but at a greater cost of provision. Where villages are more scattered, as in the Tihama, central health and school facilities are less suitable because distances are too great for patients and students to reach these services. Generally it might be sensible to increase as much as possible the mobility of the village populations to schools, health centres and other facilities by providing better communications rather than just providing more service provision. The next three chapters will consider the patterns and use of schools and health centres and some other services in the subregion. Commercial and municipal services will be considered first.

CHAPTER TEN

RETAIL AND MUNICIPAL SERVICES IN THE SUBREGION

10.1 INTRODUCTION

The previous chapter has described and analyzed the patterns of settlement and services in the subregion of Sarat Abidah. It showed that the subregion is dominated by large numbers of mainly small villages of which only a few have some types of services. This chapter discusses the provision of retail and municipal services in the subregion. The last chapter made it clear that commercial services in the subregion are highly concentrated in the two centres of Sarat Abidah town and Alharajah village. These two places are also the focus of government attempts to introduce basic municipal services into the area. These should therefore be further considered.

Retail and municipal services have seen some significant changes in recent years. In fact no municipal services existed in the area a decade ago and retail activities were then largely confined to the traditional weekly markets. Now there are over 400 stores and other commercial outlets, as well as some municipal services such as street lighting and refuse collection in and around the two main service centres. Yet nothing is really known of these services and how they have evolved in recent years.

The first part of this chapter examines the present pattern of retail services and their characteristics. A questionnaire survey of a sample of traders conducted by the writer throws some light on the traders' view of evolving commercial centres. The second section examines the existing provision of municipal services in this rural area. It discusses some of the difficulties which hinder the

expansion of these types of services to such large numbers of villages.

10.2 RETAIL SERVICES

In the past virtually all the products of the farmers and nomads in the subregion were consumed by the producing families or were marketed locally. All selling and purchasing was carried out in weekly open market places (Suq) scattered across the area. These markets operated only one day a week, neighbouring ones often working on different days to allow traders and customers to go to more than one market. The author has been able to identify eleven weekly markets which were still being held in the larger villages and central places in the early 1970s.

In the last few years as major changes have occurred in the socio-economic status of the population, the weekly markets have lost importance and have been replaced by a much larger but more centralized pattern of permanent shops and market stalls offering a much wider variety of goods.

A major cause of this switch to a more central place dominated pattern of shops has been the rapid improvement in the road network and the growth of car ownership. Fig. 10.1 shows the location of the six periodic markets still operating in the subregion and the five which ceased in the last few years. It is noticeable that in the Tihama where there has been least improvement in communications, all the markets still operate. But the eight east of the escarpment had been reduced to three by 1987.

This section analyses the present pattern of retail services in the study area. This is based on a survey of their types and distribution across the subregion and by means of a questionnaire to a sample of traders in the two

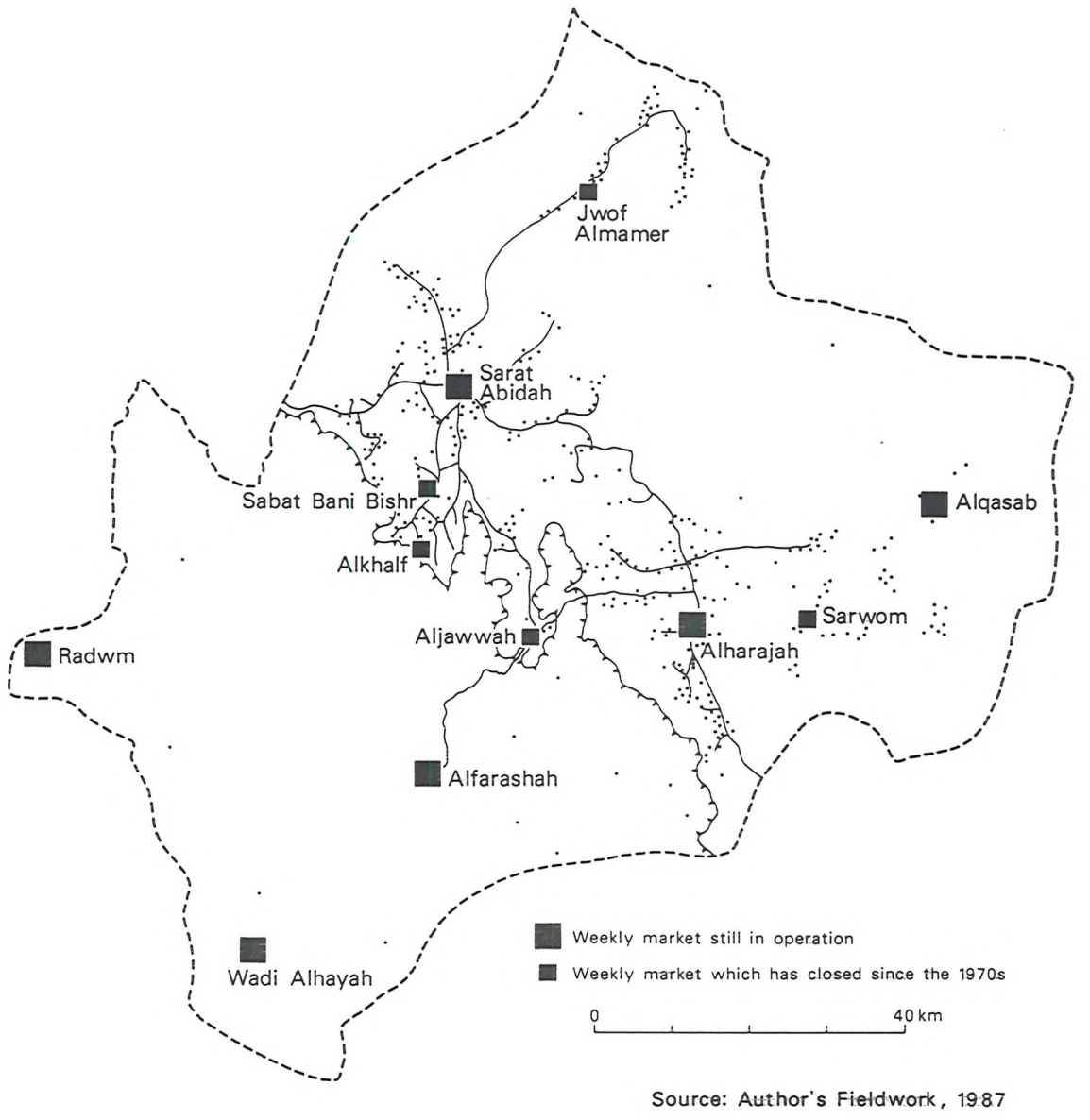
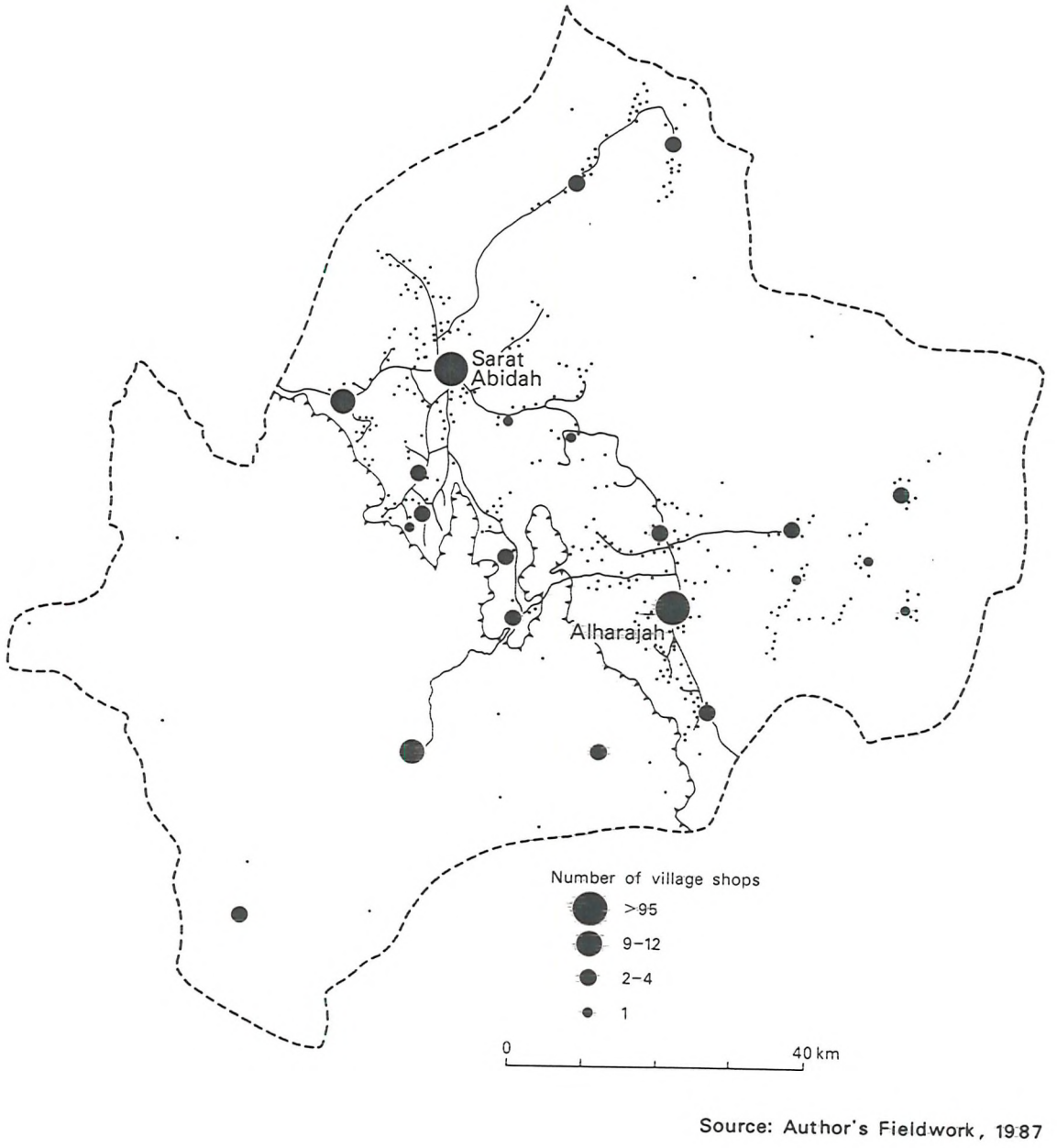


Figure 10.1 The distribution of periodic markets in the subregion, 1987

main retail service centres. No data exist in official sources on retailing in the area so that the author had to locate and classify all of the outlets himself. It immediately became clear that in spite of the large number of villages in the area the retailing pattern is highly concentrated. All of the shops are small but their total number - 387 - to serve a population of over 100,000 suggest that within a few years the retail system has become well established alongside and largely in place of the traditional weekly market system (Photos 11.1 and 11.2).

The two centres of Sarat Abidah town and Alharajah contain 328 shops. As Fig. 10.2 shows very few other villages have shops. It is also interesting to note that out of the six weekly markets which still survive, four are found in villages which are remote from Sarat Abidah and Alharajah, the two places that have become dominant in the new retailing system. But both of these places retain their markets. Three of the markets are in the Tihama and serve the scattered nomadic population of that area, and only one of them is yet connected by an all-weather road to the mountain zone. In the eastern mountains the weekly market still operates at Alqasab at the centre of a group of mountain villages distant from both Sarat Abidah and Alharajah and not yet fully connected up to the all-weather road network. The weekly markets at Aljawwah, Alkhalf, Sabat Bani Bishr and Aljwof, all on the new road system, no longer operate. All were close to Sarat Abidah town and Alharajah where retailing has mostly concentrated. The market at Sarwom in the east no longer operates. This place is still not yet connected to the all-weather road system, but is less that fifteen km from the main Abha-Najran route.

Field observation would suggest that the markets at Sarat Abidah and Alharajah are the most active and really



Source: Author's Fieldwork, 1987

Figure 10.2 The distribution of shops in the subregion, 1987

Photo 10.1 Roadside shops on the Sabat Bani Bishr-Sarat Abidah highway

Photo 10.2 The weekly market of Alfarashah in the Tihama area of the subregion

complement the shop retailing system there. It has already been pointed out that nearly 60 percent of the subregion's shops are in Sarat Abidah town (232 shops), and 25 percent in Alharajah village (96 shops). Only 59 other shops were located in another twenty villages. About a third of these are in the villages of Alfarasha and Alasran. 385 villages in the subregion had no shop.

Table 10.1 shows the distribution of outlets by main types in Sarat Abidah town and Alharajah. The main characteristics of the commercial activities in the two major centres can be summarized as follows :

1) Each commercial establishment is generally small in terms of the quantity and variety of goods offered and the number of employees. None of the shops dates back before 1975.

2) Service shops are outnumbered by about two to one by retail goods outlets where Sarat Abidah shows a much higher level of specialization than Alharajah. Amongst the retail shops, those selling foodstuffs form the largest category accounting for about 41 percent of retailers in Sarat Abidah town and no less than 64 percent in Alharajah. Clothing, textiles and shoe shops form the next largest category, followed closely by those selling household and home construction goods. But these are much more common in Sarat Abidah town than Alharajah. Outlets for hardware, construction goods (including plumbing equipment), furniture and electrical goods total no less than 41 (29 percent of the shops) in Sarat Abidah town but only 9 (16 percent) in Alharajah, suggesting a greater level of shop specialization in Sarat Abidah. Sarat Abidah town also has a large number (22 shops) of other specialist shops that could not be grouped into one of the common categories. These included sports goods, agricultural material and equipment,

jewellery, musical instruments and records, perfumery and cosmetics. Few of these types of shops were found at Alharajah.

3) Amongst the service outlets Sarat Abidah also shows a greater degree of specialization. It has two banks and two pharmacies whereas Alharajah has none, as well as more cafes, takeaway kitchens, laundries, tailors and photographic studios.

4) The general field of car repair and servicing make up the most common service outlets. Both Sarat Abidah and Alharajah were well supplied with these, suggesting that these more highway - related activities can survive just as well close to a small service centre like Alharajah as within a larger centre like Sarat Abidah town. In fact, in terms of total outlets, Alharajah had a greater proportion of vehicle - related outlets (22 percent of its service outlets) than Sarat Abidah (16 percent). Many of these garages and workshops line the main highway near to the centres rather than being in the centres themselves.

5) The recent growth of retailing and services in these centres is also reflected in the highwayside location of most of them, with only a few shops off the main Abha-Najran road that bisects both centres. In contrast the traditional suq in both centres lies off the highway.

6) Wholesale activity is not highly developed in the area. A few wholesalers of foodstuffs and household requirements are located at Sarat Abidah town but these are small and serve only a few of the traders. There are no wholesalers elsewhere in the subregion.

Table: 10.1

The distribution of retail and service outlets in Sarat Abidah and Alharajah, 1987.

Type of shop	Sarat Abidah	Alharajah	Total	%
1- Retail shops				
Foodstuffs	41	32	73	22.3
Clothing, Textiles and shose	15	5	20	6.1
Ironware, constru. material	10	4	14	4.3
Sanitaryware and plumbing	11	1	12	3.7
Electrical applin.	5	2	7	2.1
Electronic applin.	5	-	5	1.5
Furniture/Carpets	10	2	12	3.7
Stationery	3	1	4	1.2
Toy shop	1	-	1	0.3
Car accessories	8	4	12	3.7
Fruit and Vegetab.	11	2	13	4.0
Baker	6	2	8	2.4
Other shops	22	3	25	7.7
Total	148	58	206	62.8
2- Service Shops				
Bank	2	-	2	0.6
Pharmacy	2	-	2	0.6
Barber	4	2	6	1.8
Laundries	3	1	4	1.2
Petrol station and Tyre repair	15	12	27	8.2
Cafe	10	4	14	4.3
Car repair	14	5	!9	5.8
Tailor	13	3	16	4.9
Photo studio	4	1	5	1.5
Cement block maker	3	2	5	1.5
Restaurant and Takeaway	14	8	22	6.7
Total	84	38	122	37.2
Total outlets	232	96	328	100.0

Source: Author's Fieldwork, 1987

10.2.1 THE CHARACTERISTICS OF RETAIL SERVICES IN SARAT ABIDAH AND ALHARAJAH CENTRES

Retail services have expanded very recently and rapidly in the two centres. In order to assess the motivation of traders who chose to set up their stores in Sarat Abidah and Alharajah, a questionaire survey was made by the writer to 64 storekeepers in the two centres (42 in Sarat Abidah and 22 in Alharajah). A copy of the questionnaire can be seen in Appendix E. The 64 traders included fourteen food retailers, two of these being supermarket operators and one wholesaler. A number of shopkeepers retailing consumer durables were questionned, including five stores selling textiles, clothing and shoes, six selling electrical and electronic appliances, five selling furniture and carpets, and eleven selling constructional materials, paints, sanitary ware and plumbing goods. Other retail outlets surveyed included a toy shop and three retailers of car accessories. Nineteen service outlets (30 percent of the sample) were questioned included five car repairers, three tailors, two restaurants, two pharmacies and two photographic studios. Other services sampled included two petrol stations and tyre repairers, a laundry and a cement block maker.

Table 10.2 shows the shops surveyed grouped according to their location in Sarat Abidah and Alharajah. In fact this sample was originally planned to represent the total make up of the range of shops in the two centres. However, difficulties occurred during the survey, mainly the time taken and the difficulty of interviewing some of the storekeepers. There was particular difficulty in making contact with some owners of service outlets. As a result the sample is not fully representative. Only 12 percent of service outlets in Sarat Abidah are represented. Retail

outlets are better represented (22 percent) than service outlets (16 percent), and some types of retailers, such as construction goods are over-represented. But the coverage of the two centres seems adequate. The sample represents about 20 percent of the total shops in the two centres, including 18 percent of shops in Sarat Abidah and about 23 percent of Alharajah's stores.

The first two points to note about the storekeepers themselves is their predominantly local origin and their recent establishment in the retail trade. 59 (92 percent) of the 64 shopkeepers interviewed were local to the area in that they had originated in the subregion. At the same time it is worth noting that only eight of the 59 actually live in Sarat Abidah town and three in Alharajah where their shops are located. The other 48 live in the surrounding villages, often their original home village. Only five of the 64 interviewed came from outside the area, three from Khamis Mushayt and two from Abha where they still live. Only two of the five were originally from outside of Asir. Both now live in Khamis Mushayt which they had chosen for its business potential and had subsequently opened stores in Sarat Abidah as it expanded.

All of the storekeepers questioned had opened their premises in very recent years, indicating the rapid growth of shops in these two centres of the subregion. The oldest shops in the sample were established in Sarat Abidah town in 1975 and in Alharajah in 1976. These were in fact the first two shops opened in the area. Only nine (14 percent) of the 64 shopkeepers surveyed had established their shops before 1979. The great majority of shops, 86 percent of the sample, had been opened since 1980. No less than 27 percent (fifteen shops) had only opened in 1986, a few months before this survey was made.

Table: 10.2

The surveyed outlets in Sarat Abidah and Alharajah centres, 1987.

Type of Shop	Sarat Abidah	Alharajah	Total	%
1- Retail Shops				
Foodstuffs	9	5	14	21.9
Clothing, Textil. and Shoes	3	2	5	7.8
Constructional Materials	3	1	4	6.3
Sanitaryware and Plumbing & Paint	5	2	7	10.9
Electrical and Electronic Applin.	5	1	6	9.4
Furniture/Carpets	4	1	5	7.8
Toy Shop	1	-	1	1.6
Car Accessories	2	1	3	4.7
Total	32	13	45	70.3
2- Service Shop				
Pharmacy	2	-	2	3.1
Laundry	-	1	1	1.6
Petrol Station & Tyre Repair	1	1	2	3.1
Car Repair	3	2	5	7.8
Tailor	2	1	3	4.7
Photo Studio	1	1	2	3.1
Cement Block Mak.	-	1	1	1.6
Restaurant & Cafe	1	2	3	4.7
Total	10	9	19	29.7
Total surveyed outlets	42	22	64	100.0

With most shopkeepers only recently establishing their shops it was possible for them to remember and explain why they had chosen to set up in Sarat Abidah town or Alharajah rather than in their home villages or the villages they now lived in. The central location of Sarat Abidah and Alharajah to many other villages was given as the main reason by most respondents. Nearly all (84 percent) of them in both centres pointed out that they had also located on the main street where they could attract more trade. Seven also gave the lack of competition in their particular trade in Sarat Abidah and Alharajah as a reason for opening a store, while nine also felt that there was a healthy market in the area for the goods they sold.

That is, most storekeepers were able to provide at least one, and sometimes more than one, sound economic reason for setting up in Sarat Abidah or Alharajah in that particular trade. These reasons far outweighed other "non-economic" reasons which were often only given as a supplement to a main economic reason. Even so, some of these other reasons could be interpreted as economically related judgements. These included the 23 owners who stated that they had opened their premises in Sarat Abidah or Alharajah because most of the major public services such as health centres, schools and local government offices are located there. The owners of the two pharmacies in Sarat Abidah said they chose to set up there to be near to the hospital then being constructed.

A question was asked in the survey on where the storekeepers believed most of their customers came from. The answers to this showed that storekeepers commonly recognized the importance of trade derived from the villages around Sarat Abidah town and Alharajah as well as from the subemirate centre. Being a much smaller centre than Sarat Abidah, traders in Alharajah believed at least 95 percent of

their customers came from the surrounding villages. Sarat Abidah is a larger centre with about 4,500 inhabitants in 1987, but most shopkeepers there also saw the importance to their trade of customers from the surrounding villages. Eleven (26 percent) of the traders in Sarat Abidah town who were questioned believed that 90 percent of their trade came from the surrounding villages. Another 24 (57 percent) storekeepers estimated that 80 percent of their trade came from the villages. Only seven (17 percent) of the storekeepers reckoned that their trade came equally from Sarat Abidah town and the surrounding villages. Several believed that a proportion of their customers also came from other sources. In the case of the owners of a restaurant, a pharmacy and a clothing stores in Sarat Abidah, for example, they believed that half of their trade came from foreign workers in the area. Others questioned in the car repair and accessories trade, petrol sales, foodstuff wholesaling and restaurant trading believed they derived some trade from passing traffic and even from the Dhahran Aljanub district to the south of the study area.

Shopkeepers were also asked to name the most distant villages from which they gathered regular custom and these have been plotted in Fig. 10.3 to indicate the considerable catchment areas of stores in the two centres. Many of the same villages were mentioned by many shopkeepers. For instance, 86 percent of storekeepers in Sarat Abidah and 32 percent in Alharajah recognized that many customers came from the Alfarashah area in the Tihama which is more than 95 km from Sarat Abidah and about 75 km from Alharajah. But many other distant villages were mentioned by shopkeepers in the two centres. As the larger centre, shops in Sarat Abidah tended to have the larger catchments which "invade" Alharajah subemirate and the areas one might expect to look

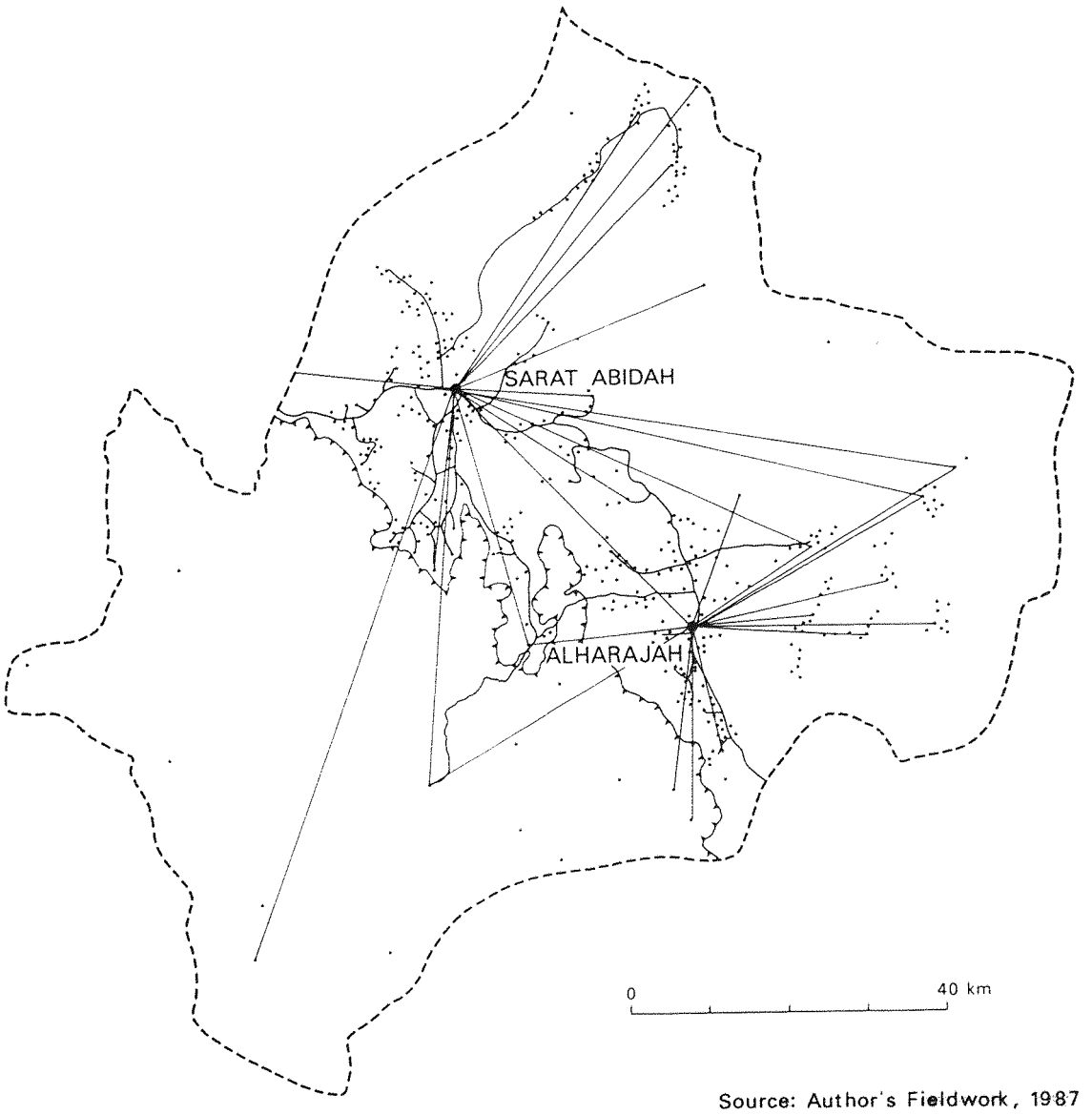


Figure 10.3 The distribution of the most distant villages shopping in Sarat Abidah town and Alharajah

to Alharajah for shopping.

Not only did the survey reveal the recency of shop development and the extensive catchments of shops in the two centres. It also revealed that many of the shopkeepers had been expanding their trade by opening new shops, mainly in the same centre, so helping to account for the rapid growth of retailing in the two centres. Twenty of the 42 store owners (48 percent) questioned in Sarat Abidah town had more than one shop. In fact in total they owned 68 stores between them, an average of 3.4 stores per owner. Easily the largest share of these (54 shops) were in Sarat Abidah town, but four were in Khamis Mushayt, three in Alfarashah, two in Abha, two in villages near Sarat Abidah and one each located outside the region in Al Bahah and Riyadh. Much the same pattern was seen in Alharajah. Of the 22 storekeepers interviewed there sixteen owned a total of 53 shops or 3.3 shops per owner. All of them were located in Alharajah.

Many of the traders questioned expect to increase their business. No less than 38 percent of owners who were interviewed had plans to further expand their businesses, mainly by opening additional premises rather than by enlarging their present stores. Only five stated that they hoped to enlarge the building they presently traded from compared with nineteen (15 in Sarat Abidah and 4 in Alharajah) who expected to expand by opening new outlets. Twelve of these were planned for Sarat Abidah, four for Alharajah and three for elsewhere. But not all traders saw as much opportunity to grow. The keepers of car repair, electrical shops and cafes that were interviewed saw little growth for them, neither in the two centres nor in the surrounding villages.

All of this expansion of outlets could lead to excessive competition and to shops owned by the same person competing

for a limited amount of trade. To some extent this problem is foreseen by owners who often diversify into other areas of retail trade rather than specialize. For example, only half of the other stores which shopkeepers owned (apart from those directly covered in the survey) were carried on in the same trade as the stores covered by the survey. Similarly only half of the stores that owners planned to open in the future would be in the same trades as their present ones. This diversification did not appear to be followed by food store owners, however. Nine of the fourteen food retailers interviewed in Sarat Abidah and Alharajah already owned seventeen other food stores in the same two places, as well as some other retailing outlets. Five of them also had plans to open a total of another seven food stores.

But apart from the food trade, diversification was normal as the following examples show. Thus, one of the pharmacists in Sarat Abidah town owned a food supermarket and cafe (also in Sarat Abidah) and planned to open a garage and to go into the water supply trade. A furniture seller in Sarat Abidah planned to open a food wholesaling store in Sarat Abidah. Of course some had expanded in more traditional ways either into closely related trades or by opening up branches in other places. One of the constructional material suppliers in Alharajah had expanded into cement block making and into sanitary ware and plumbing as house building around Alharajah had developed. One owner of a photographic store in Sarat Abidah had previously opened similar stores in Khamis Mushayt and Alharajah, as had two owners of car accessory supplies. Of the four clothing and textile stores questioned in Sarat Abidah, one was operated by a tailor who had worked in Al Bahah before opening up in Sarat Abidah. Of the other three, one had previously set up a food store in Sarat Abidah and

diversified into clothing as the market around the town expanded. One of the electronic retailers in Sarat Abidah also owned a photographic store in the town and a constructional material supplies store in Alfarashah. Growth by diversification generally seemed more popular with storekeepers than simply expanding within the one trade, with the exception of the retail food trade.

One possible reason for the different perception between the food retailers and the other traders, for future trade growth in the area, may be in part related to the storekeepers' experience of trading in other parts of Asir. Most of the food traders, who saw expansion only in terms of opening new outlets for food in the area, were local people. They seemed to lack the experience or confidence to open up shops in other trades or other places outside of the centres they already knew. Some of the other non-food traders in Sarat Abidah town and Alharajah, however, either came from outside or had worked outside the area and this made them willing to diversify. All of the pharmacists and photographic shop owners were originally from Khamis Mushayt, for example, and came to Sarat Abidah because of the trade opportunities there.

But for virtually all trades in the subregion the sampled storekeepers generally saw better opportunities in expanding in one of the two established centres in the subregion rather than in one of the other subemirate centres, or other villages in the area, or outside the subregion. Only one was who planning to open a wood factory in his village spoke of the high rents preventing further expansion in Sarat Abidah, allied to the fact that he already had land in his village that he could use. Similarly an electrical retailer in Sarat Abidah who hoped to establish a supermarket in Jeddah said he already had

premises there.

It is clear from the existing retail patterns and retailers' future plans that commercial activities in the subregion are likely to remain strongly focused in Sarat Abidah town and Alharajah. The few retailers in the other villages were not interviewed but these centres are unlikely to be able to attract much trade from the two main centres. At the same time we must recognise that these two centres are only the lower part of a supply hierarchy, with major centres like Jeddah, and secondary centres above like Khamis Mushayt. As communications further improve one may find more people from the subregion go to the large shops in Khamis Mushayt for some of their higher order goods.

This simple Jeddah-Khamis Mushayt-Sarat Abidah supply chain seems to apply to all trades. As nearly all goods handled by the traders in Sarat Abidah and Alharajah were produced outside of the area, and mostly outside of the country, questions were asked in the survey on where traders obtained their goods. Almost irrespective of the type of goods involved, supplies came mainly from Jeddah, with Khamis Mushayt acting as a secondary centre of supply for some items. This simple linkage is not surprising in view of the main road which runs north through Asir to Jeddah, and Jeddah's role as a major wholesaling point for much of Saudi Arabia. Whether it was food, cloth, clothing, medical supplies, constructional material, furniture, electrical goods, car accessories or toys, Jeddah was the main wholesaling centre with which shops in the Sarat Abidah subregion were most often in contact.

Table 10.3 shows the overwhelming dominance of Jeddah wholesalers as the source of goods sold in the shops in Sarat Abidah town and Alharajah. Nearly one half of the traders reported that they got over 80 percent of their

Table: 10.3

Origins of percentages of goods purchased by 64 stores in Sarat Abidah and Alharajah,1986.

%	Supply centres					
	Jeddah	Khmis. Mush.	Dammam	Riyadh	Abha	Sarat Abid.
100	16	6	2	-	-	-
90	6	-	1	-	-	-
80	4	3	-	-	-	-
70	6	-	-	-	-	-
60	6	-	-	-	2	-
50	8	-	-	-	-	1
40	3	4	-	2	-	2
30	2	5	6	1	-	-
20	2	6	4	3	-	1
10	4	7	1	2	1	-
TOTAL	56	31	14	8	3	4

Source: Author's Field Survey, 1987

goods direct from Jeddah. Nevertheless a surprising number of storekeepers said they got a proportion of their needs via suppliers in Khamis Mushayt which is much nearer and can supply more quickly. These included twelve of the foodstores surveyed, four electrical shops, three cloth stores, a toy shop, two furniture and carpets stores and two car accessory sellers. Rather surprisingly, Abha, as the capital city of Asir province was only mentioned as a supply centre for a proportion of the medical goods sold by the pharmacists and for no other goods. Some furniture, car accessories and constructional materials came from Riyadh. Dammam was mentioned as the main centre of ironware, paint, sanitary ware and plumbing. Many of these goods are produced in Aljubail industrial complex near Dammam. Because of the small size of many Alharajah stores and because of Alharajah's relative remoteness compared with Sarat Abidah, two of the foodstore owners and both restaurants in Alharajah said they got a proportion of their needs from Sarat Abidah, so that, to a small degree, Sarat Abidah has a wholesaling role for its smaller southern neighbour.

10.3 MUNICIPAL SERVICES

This chapter has so far shown that the retail and commercial sector, which has recently expanded in the study area, has largely concentrated in the two main service centres of Sarat Abidah town and Alharajah. This process of concentration has resulted from the decisions of many individual traders who see a greater trading potential in those places than elsewhere in the subregion.

Most of the remainder of this study of service provision in the subregion is concerned with public services rather than private sector services. In the public sector decisions

on the location of facilities and services are made by government, and in the case of the two main services of primary health care and education, the facilities and staff have to be located at numerous points to meet the needs of the population close to their homes. These more difficult locational problems are considered further in the next two chapters in connection with the provision of local health and school services in the subregion.

There are, however, several municipal type services provided by government which tend to concentrate spatially. These develop where greater densities of population require more of these services and it seems appropriate to consider here their spatial pattern across the subregion. These services include the provision and maintenance of local roads; parks and other public facilities; the provision of water, sewerage and other utilities; physical planning; and the licensing and regulation of various services provided for the public by private companies or individuals such as food suppliers.

In Saudi Arabia there are, as yet, outside of the main cities, few real equivalents of the local government authority, or the statutory body to provide a utility as found in Western countries. There are, in the subregion, no electricity or water supply networks whose locational pattern can be examined.* There are only two telephone links to Sarat Abidah and Alasran from Abhah. The Abha-Najran highway with a branch into the Tihama is the only part of the national road network in the area.

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* Virtually all of the subregion was intended to have an electricity supply by 1985 and houses in all villages in the mountain area already have connections to the electricity network but no power supply. The network was to be supplied by the Asir General Electricity Corporation in Abha city, but because of bureaucratic blockages and the lack of funds, connection to the high voltage supply is not now expected until at least 1989.

The only other centralized government services operating in the study area, apart from health and education, are the municipal services. Two municipalities have been set up in the subregion, one an urban based municipality in Sarat Abidah town, the other a village based one at Alharajah. These provide a range of basic services to some villages in the study area. As was stated earlier, the provision of municipalities in the Kingdom is controlled by the Ministry of Municipal and Rural Affairs (MOMRA). It lays down that municipalities must provide a wide range of services to their communities. These include the asphalting of local roads, paving sidewalks, planting along roads and installing street lights; the construction and maintenance of local water supply and sewerage disposal systems; the provision of public staughter-houses, meat and vegetable markets; public parks and public toilets; the provision of refuse disposal; the designation and development of public recreation areas; the local protection of public health and safety, including the provision of licences for building construction and electricity supply; and the preparation of physical plans for towns and villages (MOMRA, 1977). It is clear, however, that the two municipalities in the study area are largely failing to provide even the most basic of this range of services to most of the settlements defined as part of their municipal areas. This result from the lack of funds, a shortage of skilled manpower, poor planning, and the short time the municipalities have been in existence. This section therefore reviews the progress that has been made in the field of municipal service provision in the study area in order to identify their problems and future needs.

Reference has already been made to the Sarat Abidah municipality being urban based and the Alharajah being rural based. This needs further explanation. The MOMRA contains

two deputy ministries, the Deputy Ministry For Town Planning (DMFTP) which is responsible for funding municipal and planning services in cities and towns. The Sarat Abidah municipality is funded by this branch and was set up in 1976. The Deputy Ministry For Rural Affairs (DMFRA) provides similar municipal services in some villages but only villages which form part of a defined "village cluster" are covered by its activity.

Progress in developing the village cluster municipality policy has been slow. In the first eight years of its implementation between 1976 and 1985, only 45 clusters were recognized throughout the Kingdom. The Alharajah cluster is one of these and was set up in 1983. Moreover, the progress in providing municipal services in these officially defined clusters has been very limited. This was confirmed in a report by MOMRA in 1981 which concluded that the village cluster policies for the improvement of physical facilities in these villages had come up against a number of problems, mainly the shortage of skilled staff and of necessary funds to carry out medium and long term projects.

It is not therefore surprising to find that municipal service provision in this subregion is still very limited twelve year after the village cluster policy was initiated. Although the study area contains large numbers of village communities, most of these communties are considered too small for municipal services. According to a DMFRA study in 1984, 94 percent of the 316 villages in the subregion were classed as small with less than 60 houses each, and only 6 percent were considered to be medium size communities of between 60 to 200 houses.

Originally the municipality of Sarat Abidah town was supposed to serve the town only. However, because it is small and surrounded by a large number of villages, DMFRA,

with the agreement of MOMRA's regional office in Abha, extended the municipality by ministerial decree in 1978 to include 47 villages around Sarat Abidah town.* Two years later and after demands by several other villages to be served by the municipality, another ministerial decree was issued to extend municipal services to another 43 villages.** This gave a total of 90 villages within the official catchment area of Sarat Abidah municipality, or about half of all the villages in the Sarat Abidah subemirate. Officials of the MOMRA for Asir province estimated that no less than another 135 villages in the study area benefit to some extent from Sarat Abidah's municipal services. This means that a total of 225 villages with more than 70,000 inhabitants are believed to be served to some extent by Sarat Abidah municipality (Asir General Directorate of Municipal and Rural Affairs, 1987). But it is only about 43 villages closest to Sarat Abidah that obtain the fuller range of services.

The rural municipality based on the Alharajah village cluster is smaller. No official catchments have been defined for the village cluster. However, officials of the Alharajah village cluster claimed that it is intended to serve Alharajah and Alfayed areas with a total of 182 villages having more than 29,000 people. But most of these villages lie well beyond the real limits of municipal services. As in other municipalities and the villages attributed to them, available staff, money and equipment are too small for the population and area to be provided for and so only the central settlements really benefit.

The more limited area of the defined municipality which benefits from municipal services is indicated by Table 10.4

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* Ministerial decree No 1050, dated 15/3/1398 A.H (1978).
** Ministerial decree No 5/4730 in 8/11/1400 A.H (1980).

which shows the projects implemented by Sarat Abidah municipality during its first ten years. It can be seen that the main expenditure, about 60 percent of the total, was concentrated on the asphalting of roads connecting 58 villages in the municipality with Sarat Abidah town. In general terms Sarat Abidah town and Alasran village to the west benefited most from the asphalting of roads and the provision of street lighting. The laying of even rudimentary asphalt roads to surrounding villages has greatly helped local communication. Some 1.13 million square metres of asphalt was laid to create a local road network of about 280 km. But all of these roads have been laid rapidly without proper foundation or drainage and so have a short life. Roads are frequently washed out in the rainy season. Much of the remaining expenditure was for facilities within Sarat Abidah town.

Table: 10.4

Projects undertaken by Sarat Abidah Municipality, 1976-1986.

Type Of Project	Cost in SR
Asphalting and Lighting of roads	23,724,134
Erection of a vegetable and meat market building	1,098.352
Erection of a slaughter house	1,549,155
Enclosing 48 cemeteries	6,448,327
Erection of a Municipal building	5,225,321
Miscellaneous	1,254,883
TOTAL	39,300,172

Source: Sarat Abidah Municipality, 1987.

In the case of the Alharajah village cluster road asphalting was the first project carried out by the municipality. Begun in early 1987 at a cost of SR 6,257,183 the local asphalted road network links the larger villages

of Alfayed and Wadi Yawad. Work on expanding the asphalting programme is still in progress.

Fig. 10.4 shows the whole road system in the subregion and shows how the local roads provided by the two municipalities act as "feeders" to the main national roads in the study area. The first paved road to be laid by the Ministry of Transport in this area was the part of the Abha-Najran highway which was completed in 1970. This road was a great benefit to Sarat Abidah and Alharajah centres and many villages alongside the road by linking them with the two main towns to the north, Abha and Khamis Mushayt. The most important recent project of road construction was that between Sarat Abidah and Alfarashah in the Tihama with a total length of 109 km which was completed in 1983 at a cost of SR 523 million (Photos 11.3 and 11.4). This road which runs down the escarpment into the Tihama has provided a direct linkage between the settlements in the mountains and the Tihama which used to be so isolated. These highways together with the local road network play an important role in the development of the subregion and in the utilization of various services as will be shown in the following chapters.

Other benefits of municipal status are much more limited in and around both centres. Over its first ten years of existence the Sarat Abidah municipality erected a municipal building, a vegetable and meat market building within the old periodic market area, and a slaughter house. A large number of cemeteries were walled off. Far less municipal improvement has occurred in and around Alharajah.

Ongoing services intended to be provided by the two municipalities, such as physical planning and licensing of activities for public safety, have so far made limited progress, largely because of a lack of trained personnel to

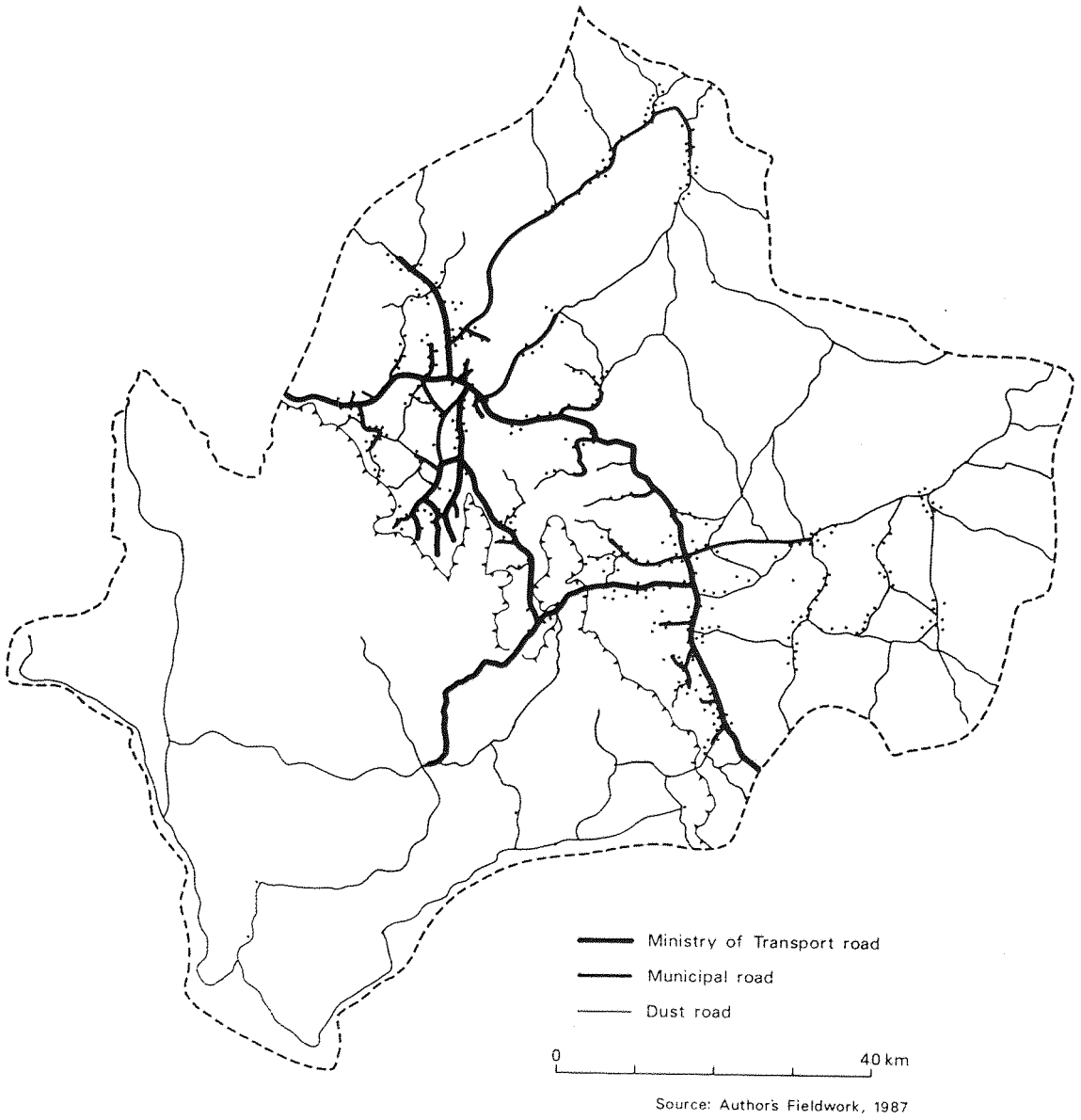


Figure 10.4 The road network in the subregion, 1987

Photo 10.3 Aljawwah descent road which runs down the escarpment to Alfarashah in the Tihama providing a direct link between the population of the mountain and Tihama areas

Photo 10.4 A municipal road which links the Alarquayn villages with Sarat Abidah, the main town of the subregion

run them and of basic data on which to prepare proper regulations. Physical planning in the two municipalities has been very limited because of an absence of topographic plans or detailed data on the local economy as well as the lack of staff trained in planning and land use control. So far efforts have centred on the preparation of plans for some undeveloped areas. These include the identification and marking off of 2166 plots for residential development in Sarat Abidah municipality and 486 parcels in the Alharajah cluster.

Table: 10.5

Number of building permits issued by type of permit.

Type of Permit	Sarat Abidah Municipality 1978-1986	Alharajah Cluster 1983-1986	Total
Building Construction	829	172	1,001
Building Alteration	78	75	153
Compound walls	132	182	314
Total	1,039	429	1,468

Source: Sarat Abidah Municipality and Alharajah Cluster, 1987.

Municipalities are also intended to issue building permits as a further means of controlling development, but building control in only a few of the larger villages in the two municipalities has so far been covered by this. Table 10.5 shows the total number of permits issued by Sarat Abidah municipality and Alharajah village cluster in their first years of existence. Only 1,001 building permits were issued in the two municipalities for new buildings. No data is available on the actual number of houses built in those years in the municipalities but it probably greatly exceeded

this figure. Most people are still able to build houses without permits and without any planning control so that some substandard housing continues to be built.

Another responsibility of the municipalities is the protection of public health and safety. This mainly focuses on the inspection of food establishment and the issuing of permits to open new shops. For example, during 1986 the municipality of Sarat Abidah issued 83 permits to open new shops. 325 inspections of food establishment were carried out, at which a total of 870 kg of vegetables, fruit, flour and meat were confiscated because they were unfit for human consumption.

The main basic service that has been developed for some households in the two municipalities is refuse collection, but even this service is restricted because of the limited equipment and workforce to operate it. This results from funding constraints although more money has been provided for this in recent years. For example, Sarat Abidah municipality spent SR 455,000 in 1978 on refuse collection, but this had increased to SR 1,779,000 by 1987, a 291 percent increase. Even so the municipality only has seven vehicles with 23 workers to collect refuse so that not all villages in the municipality get a regular collection. Alharajah cluster has only two collection vehicles and twelve workers so that, apart from Alharajah village itself, only a few villages along the main highway up to fifteen km from the main settlement receive a regular refuse collection. The majority of villages dispose of their household garbage in empty sites near the villages. These are unregulated sites and this causes nuisance to nearby residents.

The two municipalities in the subregion provide few other services. There is no piped sewage disposal system to

treatment plants in the study area, but some villages, particularly the larger ones, now have septic tanks and percolation pits for sewage and waste water. Many houses in many villages do not even have this. The municipalities in the subregion have not yet taken responsibility for the control of sewage disposal even though they are expected to protect public health.

One of the other duties of the municipalities is to ensure that clean water is available to households and when possible to construct water supply systems in the areas they serve. There is, however, no piped water supply in the study area. The municipality of Sarat Abidah provides water for the town from one government-owned well and four private wells located some four km distant from the town. Tankers deliver water from these wells to the town's reservoir which has a capacity of 200 cubic meters. It is then distributed by tanker to household cisterns as required. Outside of the town village households provide water for themselves in various ways, the most common being from private wells to roof cisterns, and delivery by tanker. Some villagers pump water directly to their houses from their own wells.

Sarat Abidah town has a limited electrical supply during the evenings only from a municipal generator. Some villages have local supplies from small generators provided by the Ministry of Industry and Electricity when they agreed as a community to pay for the network. Many other village households provide themselves with electricity from their own generators but many still have no electricity at all.

It is clear that neither municipality is able to fulfill more than a fraction of its responsibilities. It is therefore of interest to consider the opinions of officials of the two municipalities about difficulties they face in improving their services to such large numbers of

settlements. These observations were obtained in broad ranging interviews the author had with officials of Sarat Abidah municipality and the Alharajah cluster as well as with some of the people in the villages.

Table: 10.6

Municipality manpower, 1987.

Type of Staff	Sarat Abidah Municipality	Alharajah Cluster
Administrative	14	8
Surveyor	4	2
Health Inspect.	3	1
Construct. Tech.	2	1
Town planner	1	-
Labourer	80	37
Total	104	49

Source: Sarat Abidah Municipality and Alharajah Cluster, 1987.

Firstly, it is commonly seen that both municipalities greatly suffer from a lack of skilled staffs, particularly managerial staff able to implement the various guidelines of the MOMRA's resolution on municipal services. This view is supported by details of the manpower employed by the two municipalities shown in Table 10.6. The majority of the manpower are labourers generally doing unskilled jobs, such as refuse collection. Some are only employed for the duration of a particular project, such as the construction of a road. The next most common category is general administrative staff but none of these employees had received specific training to carry out their tasks. Most of them had come from outside the area or from abroad and they lacked a proper understanding of the customs of the people and of the needs of a predominantly rural environment. Table 10.6 also shows that each municipality has only a small

technical staff. In spite of the rapid growth of both places as service centres, Sarat Abidah has only one town planner and Alharajah has none.

Secondly, it is widly recognized that the municipal services in this subregion suffer from a lack of investment, thus restricting their extension to a larger number of villages and preventing the execution of large scale projects with a longer-term benefit. The Mayor of Sarat Abidah municipality reported that the municipality's budget for 1986 was about SR 7,200,000 and although this was more than double the 1978 budget, it is still very small for the population and services that needed to be provided. Projects which needed immediate implementation in the municipality were estimated to cost more than SR 54 million. These projects include the asphalting of more rural roads and improvements to others already laid; street lighting; the widening and laying out of new streets in Sarat Abidah town including compensation to landowners; construction of four bridges; the erection of public toilets; the laying out of public gardens; and construction of boundary walls around about 150 cemeteries. Most of these projects will never be undertaken unless the municipality budget is greatly increased.

Officials at Alharajah cluster similarly reported that their budget of SR 3,800,000 in 1986, about half that of Sarat Abidah's, was insufficient to meet basic needs. Apart from road asphalting, household refuse collection is the only primary service that can be provided and even then to only a small part of the municipality. This lack of funds for municipal services, as a time when government spending has been relatively generous, is blamed locally on the centralized nature of the Ministry of Municipal and Rural Affairs which makes its decisions in Riyadh with little

knowledge of local needs. But, obviously, the Ministry has to meet many competing claims across the country. For Asir it passes its decisions on to its general directorate for the Asir region in Abha city for implementation. Only between 30 to 50 percent of local requests from the municipalities for funds are approved.

Thirdly, there is a lack of participation by local inhabitants in municipal affairs which results from their not being represented on bodies involved in the planning and implementation of municipal projects. In turn this can result in projects not meeting the needs of the villagers or in causing conflicts when, for example, a landowner objects to a new road to his village crossing a piece of his land. Proper involvement by the community in such proposals can often diffuse objections.

Finally and most importantly, the excessive catchment areas for which the municipalities have become responsible was a predominant problem complained of by the officials. It has already been pointed out that the catchment area of each of the two municipalities is not clearly defined, but the General Directorate of Municipal and Rural Affairs for Asir has designated a total of 225 villages to be served by the municipality of Sarat Abidah and 182 villages to be served by Alharajah cluster. In this way virtually every villages in the subregion is supposed to lie within the orbit of one of the municipal centres. It is clearly impossible for two small centres and their officials to provide services to such a vast area and population. Many of the villages lie at a great distance from their municipal centre. The most distant village in the Sarat Abidah municipality is more than 95 km away in the Tihama area, while the distance between Alharajah and its most distant village in the Alfayed area is more than 55 km. Clearly such distant villages cannot be

properly served, but some of the municipalities' limited funds have to be spent attempting to provide distant villages with a minimum of services. Sarat Abidah municipality has established two branch offices in Alfarashah and Alarquayn, for example, to provide some services in these distant areas. But each of these branches is only staffed by one clerk and three workers with one vehicle for refuse collection. These vehicles only operate in the main settlements so that most of the distant villages gain no real benefit from being included within the extended catchment area of the municipalities. Altogether it is estimated that only about one quarter of the villages in these catchments really benefit from even the most limited services of the municipalities.

It is clear that the two municipalities have made limited progress in developing the study area, and they are even failingto provide the most basic municipal services in the two municipality centres of Sarat Abidah and Alharajah. This clearly results from the large catchment areas, the lack of funds, a shortage of skilled manpower and poor planning. It is therefore important that the two municipalities should concentrate their efforts in developing the two centres of Sarat Abidah town and Alharajah which are undergoing rapid expansion. It is also important that other clusters of villages should be selected as major service centres with clear catchment areas for future provision of municipal services. This is considered in the concluding chapter where eight villages have been selected to act as service centres and might become the basis of new village cluster municipalities.

CHAPTER ELEVEN

THE PROVISION OF EDUCATION SERVICES IN THE SUBREGION

11.1 INTRODUCTION

For seventeen years after the unification of Saudi Arabia in 1932 no modern school existed in the study area. Until 1949 the only schools in the area were run by religious persons who gave lessons in the village mosques for some of the village children so that they could read the Quran and would better understand the Islamic religion. Not all children got even that much schooling because fathers had to pay for children to go to these schools. The development of a modern system of education in the subregion did not begin until 1949 when the first elementary school for boys was established by the government in the village of Alasran fifteen km to the west of Sarat Abidah town. This was fifteen years after the first government school was opened in Abha, the capital of the province.

The educational level is a very important indication of the social and economic development of the study area. However, available data on the educational status of the population is old. Reference was made in chapter eight to the data contained in the 1974 census on the high levels of illiteracy in the region and especially amongst the nomads and female population. At that point in the thesis the higher level of literacy of rural males was contrasted with the much lower level amongst the male nomads. In Table 11.1 the educational levels of the population in the subregion aged ten years and over by sex and zone are shown. Again the very high illiteracy rate in 1974, with about 84 percent of the adult population classed as illiterate, can be noted. This rate was higher than the regional figure of

about 80 percent and the national figure of 64 percent. But illiteracy was much higher amongst the female than male populations. It is interesting to note that while 13 percent of the total adult population in the subregion was classed as literate, only 4 percent had more than a primary education in 1974. This means that the majority of the literate population could only be classified as semi-literate and many of these people had no basic schooling. Less than 2 percent of the population had enjoyed a post-elementary education.

The Table also shows the marked variation in the degree of literacy between the people in the mountain and Tihama zones of the subregion. This resulted from the different level of development of the school system and other social and economic differences in these two areas. The proportion of illiterates in the Tihama area was markedly higher, partly because of the late development of schools, and because of the large nomadic population. The mountain area had lower illiteracy levels compared with the Tihama partly because of the earlier development of education in this part and also the greater efforts of some of the village populations to attain some basic schooling later in life, often by working with the government, particularly in the army. 6 percent of males in the mountains had enjoyed a post-elementary schooling whereas none of the males in the Tihama had more than an elementary schooling.

There was less difference in the pattern of educational levels between females in the two zones in 1974. Illiteracy amongst the females was almost as common in the two zones, at 94 percent in the mountains and 99 percent in the Tihama, and few females in either area had gone to school.

Some confirmation of the general pattern of educational

Table: 11.1

Educational levels of population ten years and over by sex and zone in the subregion, 1974, (percent).

Educational Status	Mountain Zone			Tihama Zone			Total Area		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Illiterate	49.1	93.8	74.3	93.3	99.3	96.2	70.4	96.0	83 5
Read Only	7.6	0.9	3.8	4.2	0.1	2.2	6.2	0.6	3.2
Literate	25.7	3.8	13.4	2.3	0.1	1.2	15.0	2.3	8.7
Elem. Sch.	10.8	0.4	4.9	0.1	-	0.1	5.3	0.2	2.8
Interm. Sch.	3.7	0.2	1.7	-	-	-	1.5	0.1	0.8
Second. Sch.	1.7	0.3	0.9	-	-	-	0.9	0.1	0.5
Univer. Deg.	0.8	-	0.4	-	-	-	0.4	-	0.2
Unknown	0.6	0.6	0.6	0.1	0.5	0.3	0.3	0.7	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: The 1974 Census.

levels of the study area's population in 1974 is also given by Table 11.2 which shows school attendance by children aged six to nine years old subdivided also by sex and zone. In general, of the 6781 children aged six to nine years in the subregion in 1974, only about 27 percent attended schools, leaving 73 percent not in school. This was because of the small number of schools in the study area at the time of the census. The great difference in the level of school attendance between the boys and girls, and also between the mountain zone and the Tihama area, is also clear. While 56 percent of boys attended schools in the mountain in 1974, only about 17 percent of girls attended schools in that area. In the case of the Tihama area there were only 15 boys (1.7 percent) of the 897 boys in the age group of six to nine years old in school. None of the 854 girls in the Tihama attended any school. In fact the fifteen boys who attended school in the Tihama area in 1974 were either taught in the traditional "Katatib", or studied outside of the area because there was no government school for them in 1974.

Since the first government school for boys was opened in the subregion at Alasrat in 1949, the speed of educational development, at least at the primary level, has been rapid. Even so major gaps remain in the system not least in the Tihama, at the higher levels, and especially for girls. This chapter examines the development of this provision and its level of use in order to later identify the problem of allocation of educational resources in this area.

Data availability has been a major problem in this aspect of the work. Firstly, there are two separate school systems. The provision of education in the study area is divided by age and sex into boys' primary, intermediate and secondary schools. All schooling for boys is provided

Table: 11.2

School attendance by children aged six to nine years old in the subregion, 1974.

Zone	Boys				Girls			
	In school	%	Not in school	%	In school	%	Not in school	%
Mountain	1362	56.2	1061	43.8	438	16.8	2169	83.2
Tihama	15	1.7	882	98.3	-	-	854	100.0
Total Area	1377	41.5	1943	58.5	438	12.7	3023	87.3

Source: The 1974 Census.

entirely by the Ministry of Education. Girls' education is provided separately by the General Presidency For Girls' Education and is similarly divided into three age groups. There is no provision in the area for pre-elementary education. Nor is there any private school, technical or university education.

Secondly, the lack of even the most basic data on the education services of the Sarat Abidah area in one central data source has also made the analysis of the provision difficult. The area is divided differently for boys' and girls' education, and for different levels of education, and these authority areas have few common boundaries. As has already been pointed out, the author has had, therefore, to collect information from various sources especially from the local education offices for boys and girls in Sarat Abidah and from the Ministry of Education and the General Presidency for Girls' Education in Riyadh. 64 boys' elementary schools and all 37 girls' primary schools in the area, as well as all intermediate and secondary schools, were visited to gather data on student numbers, catchments and similar material. It was not possible to questionnaire younger children but many headteachers were interviewed. Questionnaires were distributed among most students in the secondary schools to establish school catchments and travel patterns to school. The following review and analysis of the provision of education services in this subregion is based esentially on this range of sources.

11.2 GROWTH OF SCHOOLS

Table 11.3 shows the development of schools in the subregion since 1949 by level and sex. It can be seen that the early rate of growth in the boys' elementary school

system - the first part of the education service to be established- was very slow. Only three schools were opened in the first 11 years. Only after 1960 did development speed up. Four years after the first school was opened at Alasran another was establised in Sarat Abidah town. Only one more was open by 1959.

The period of 1960 to 1964 showed more rapid growth in boys' elementary schools with eleven schools started in this five years. Seven more boys' elementary schools were opened during the period 1965 to 1969 which also saw the establishment of the first boys' intermediate school, set up in Sarat Abidah town in 1966. Thus it was seventeen years after the establishment of the first elementary school in the subregion, and only after the creation of fifteen boys' primary schools, that the area got its first intermediate school. During the same period also the first girls' elementary school was opened in 1969 in Sarat Abidah town, so that a start to girls' education in the area occurred twenty years after the first provision for boys. But this lag in girls' education reflects the pattern in the country as a whole following earlier government investment decisions to favour boys' education.

The 1970s saw much more rapid expansion of all sectors of the school system in the area with the provision for girls' education reducing some of the earlier shortfall. In the period 1970 to 1974 seventeen primary schools for boys were set up at twice the annual growth rate of the previous decade. Also the number of boys' intermediate schools rose to four by 1974. The first secondary school for boys was opened in the subregion in 1973 in Sarat Abidah town. This was only five years after the first secondary school was started in Asir, at Abha, the regional capital, in 1968. Some progress was also made in the development of the girls'

school system in the 1970s. With a new girls' elementary school opened every year between 1970 to 1974 the number of girls' schools rose to six in 1974 compared with only one in 1969. Overall the years 1970 to 1974 saw the total number of schools in the study area increased to 49 compared with 23 schools in 1969.

During the second half of the 1970s the rapid expansion of the school system continued. 27 schools were established in the subregion of which nineteen were for boys (thirteen boys' elementary, and six boys' intermediate). Seven girls' primary, and one girls' intermediate school were also set up. This gave a growth rate of 5.4 new schools per year compared with 5.2 schools per annum in the previous five years and 2.0 per year in the 1960s. The 53 schools established in the area in the 1970s were more than double the total number of schools created over the previous twenty years. This rapid growth in the 1970s was a direct result of the Kingdom's first and second five year plan which put major investment into education provision in the country, especialy after the rapid increase of the government revenue from oil from 1973 onwards. This means that during the 1970s the school system in the area was expanded not only in number of schools but in its range. While boys' elementary schools still predominated a start had been made on girls' schooling and post-elementary schooling for boys. Boys' elementary schools by 1980 made up 67.1 percent of the total. Another 14.5 percent of schools were for post-elementary boys. Only 18.4 percent were girls' schools.

The early 1980s saw a peak level of school development to bring elementary schools for boys into virtually every village area and a similar major expansion of elementary schooling for girls. During the first five years of the 1980s, 63 schools were established. This was a growth rate

Table: 11.3

The growth of schools by level and sex in the Subregion, 1949-1987.

Yreas	Boys Schools				Girls' Schools				Area	Cumul.
	Prim.	Interm.	Second.	Total	Prim.	Interm.	Second.	Total	Total	Total
1949	1	-	-	1	-	-	-	-	1	1
1950 - 54	1	-	-	1	-	-	-	-	1	2
1955 - 59	1	-	-	1	-	-	-	-	1	3
1960 - 64	11	-	-	11	-	-	-	-	11	14
1965 - 69	7	1	-	8	1	-	-	1	9	23
1970 - 74	17	3	1	21	5	-	-	5	26	49
1975 - 79	13	6	-	19	7	1	-	8	27	76
1980 - 84	25	7	4	36	23	4	-	27	63	139
1985 - 87	1	-	-	1	1	-	1	2	3	142
Total	77	17	5	99	37	5	1	43	142	142

Source: Author's Fieldwork, 1987.

of 12.6 schools per annum compared with 5.4 schools per year in the previous period of 1975 to 1979. 36 new schools for boys were created. 25 of these were primary, but seven were intermediate and four were secondary schools to significantly improve the post-elementary sector. Equally significant was the opening of 23 elementary schools and four intermediate schools for girls which increased the girls' share of schools from 18 percent in 1979 to more than 29 percent in 1984.

During the current five year period (1985-89) the rate of expansion has dropped partly because the level of primary provision, at least for boys, calls for few additions, and partly because of reduced government revenues. At the time of writing only two new elementary schools, one for boys, had been opened in this five year period. Nevertheless, the first girls' secondary school was set up in the subregion in 1987 in Sarat Abidah town, eight years after the first girls' intermediate school was started and thirteen years after the first boys' secondary school. There are two possible reasons for the late development of a girls' secondary school. Not only is it necessary to first create a pool of students educated to the intermediate level from which to create a catchment, but there have also been difficulties in finding teachers to cover the range of specialist subjects offered in the modern secondary school.

By the beginning of 1987 the total number of schools in the study area had risen to 142 of which 70 percent are for boys and 30 percent are for girls. That 80.3 percent of all the schools are for the primary age group of boys and girls reflects the government policy to expand the elementary educational opportunities for the majority of the population.

11.3 THE STATUS AND QUALITY OF SCHOOL BUILDINGS

This rapid expansion of the school system might suggest lavish investment. In fact the standards of the individual school buildings and the facilities they offer are frequently poor, because more emphasis has been placed on getting schooling to as many students as possible and less attention has been given to the quality of the accommodation. As one example of this, 65 percent of the schools in the subregion are in rented buildings, generally traditional houses of a type no longer considered suitable for living in. Much of the investment has been in staff and rent rather than purpose-built schools.

The Ministry of Education and the General Presidency for Girls' Education do lay down recommended standards for building quality against which it is possible to judge existing school condition in the study area. For example, the recommended plot size for a primary school is 8,500 square metres to provide space for fifteen classes in a two storey stucture. An intermediate school should have a similar sized plot in order to accommodate nine classes, or an eighteen class school building arranged in two or three storeys. Even these levels of space provision are low compared with many other countries. In the U.K., for example, a primary school with twelve classes should occupy 23,000 square meters, including the playground, which is a level of provision more than twice as generous as in Saudi Arabia. Similarly a secondary school with eighteen classes in the U.K. should have a total area of 50,000 square meters compared with only 10,000 square meters in Saudi Arabia (Scan Plan, 1982). These large differences in space provision result mainly because far less play and sports space is provided by the Saudi standards.

Even though these recommended standards are modest by the standards of advanced countries they are not commonly met by the schools being operated in the subregion under study. It was not possible in the author's survey to get detailed data on space provision in individual schools but he was able to obtain data on the status of school buildings, that is whether they are owned by the government and therefore constructed for school use, or whether the school operates in makeshift, rented accommodation. An attempt was also made to classify the buildings into one of three categories according to the condition of the building, the available space in the building, the availability of a playground, the level of provision of sanitation and other school resources such as furniture, laboratory equipment, and library.

Table 11.4 summarizes the result of this survey of the 142 schools in the subregion. The majority of both boys' and girls' schools are in rented accommodation, this being most common for the elementary schools where traditional houses of mud and brick with small dark rooms and without playgrounds or sanitation, are frequently used. Less than one third of elementary schools are in government-owned buildings and these are often prefabricated structures which are poorly maintained (Photos 11.1 and 11.2)

The provision of purpose-built facilities is a little better at the intermediate and secondary levels where more of the schools have been more recently established and needed better provision to meet the pupils' needs at the more advanced stages of education. Even so, more of the boys' intermediate and secondary schools occupy rented rather than government-owned buildings although all six of the girls' schools at this level are in government-owned premises. Generally the government-owned buildings used for

Table: 11.4

The status and quality of school facilities in the Subregion, 1987.

Educational Level	Building Status		Building Quality		
	Govern.	Rented	Good	Fair	Poor
Boys' Schools					
Elementary	23	54	20	18	39
Intermediate	8	9	7	4	6
Secondary	2	3	1	2	2
Total	33	66	28	24	47
Girls' Schools					
Elementary	11	26	10	13	14
Intermediate	5	-	2	3	-
Secondary	1	-	-	1	-
Total	17	26	12	17	14
Subregional Total	50	92	40	41	61

Source: Author's Fieldwork, 1987.

Photo 11.1 A purpose-built prefabricated building used as a boys' primary and intermediate school in Alabidiyah village in the mountain area

Photo 11.2 A rented building of mud and brick used as a boys' primary school in Alharajah area

intermediate schools occupy sites which also accomodate primary schools.

Because so many schools occupy rented accommodation many schools can be rated as offering only poor facilities in terms of resources, playground and classroom space, even at the elementary level. Only 28 percent of the boys' schools were rated as in good condition. The girls' schools rated little better. Schools in the Tihama area were shown to be the worst.

11.4 THE SPATIAL PATTERN OF DEVELOPMENT

It has been mentioned that the majority of schools in the study area are for the primary level of education. 78 percent of the total boys' schools , and 86 percent of the total girls' schools are at the elementary level. This type of development follows the government policy of providing primary education for all children wherever they live, so that this section of this chapter examines the extent to which that policy has been achieved in the subregion by an adequate spread of schools

The development pattern of boys' primary schools in the area since 1949 is shown in Fig. 11.1. It reveals that the first three primary schools opened in the area, between 1949 and 1959, were located in the three of the main villages: Alasran, Sarat Abidah and Alkhalf. It is not surprising to find the first schools opening in these places. These villages were the largest places in their localities even though only Sarat Abidah was a subemirate centre. They were also villages where community leaders lived and they were able to use their political influence to get schools provided first.

In a second stage of schools provision from 1960 to 1964, eleven elementary schools were started in various parts of the well settled mountain area. These schools were located in or close to clusters of villages such as Alharajah, Alarquayn and Alfayed. Seven more elementary schools followed during the period 1965 to 1969 in the other village clusters in the mountains, some of them close to existing schools, as seen around Alfayed, but where additional school places were needed.

In the 1970s school provision for primary-aged boys was spread further into smaller centres of population. 30 schools were set up during the decade. For the first time schools were established in the Tihama area. The first school in this area was opened at Alfarashah in 1976. Albwgah and Aldafah got schools in 1978 and the nomad villages of Aljahfa and Almofah were served in 1979. It was 27 years after the establishment of the first school in the mountain area that schools were first set up in the Tihama. This delay is explained by the area's isolation until 1976 when the first dust road was opened to connect it with the mountain area. Only then could the difficulties of finding teachers willing to live and work in the hot and backward nomadic areas be overcome.

But during the period of 1980 to 1987 26 primary schools were established within the subregion and again the Tihama obtained most of them as attempts were made to speed progress in that part of the subregion. Nineteen schools were set up close to the nomadic settlements or on the flanks of the mountains where new nomadic settlements were appearing in the north of the subregion. Recent years have seen a slowing down to the programme of school development at the elementary level especially in the mountain zone. Only five new schools were opened in the mountain villages

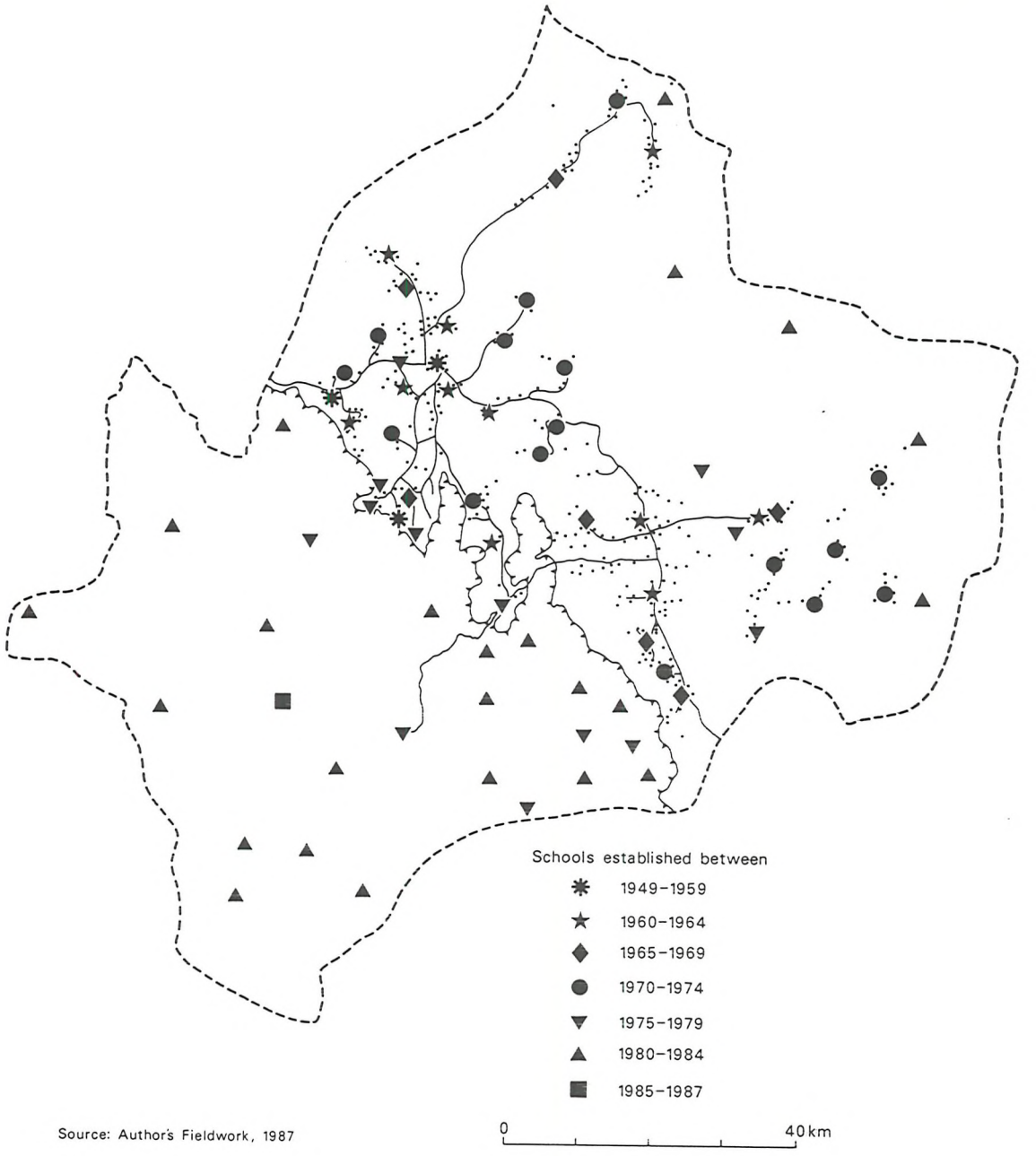


Figure 11.1 The pattern of Boys Primary School development in the subregion, 1949–1987

after 1980. Since 1985 only one school was opened in the Tihama area, at the Himah nomadic site, in 1986.

It can be concluded then that the pattern of boys' primary schools has now reached a mature stage of fairly general provision and has attained this level by spreading from the large villages in the mountain area, to the small cluster villages and small individual mountain villages, finally diffusing into the Tihama and the nomad area in the northeast. This process is shown diagrammatically in Fig. 11.2. Fig. 11.1 shows it is a well dispersed pattern which is denser in the main mountain zone where more villages are found, and more scattered in the less settled Tihama and northeastern areas. These pattern reflect the result of the quadrat analysis of primary schools reported in chapter nine.

Less progress has yet been made in creating a mature system of upper level boys' schools but similar processes are apparent in the sequence of development. Fig. 11.3 shows the development patterns of boys' intermediate and secondary schools in the study area. It shows that the first intermediate school was set up in 1966 in Sarat Abidah town. Over the period of 1970 to 1974 three intermediate schools were established at Alasran, Alkhalf and Alharajah, all large mountain villages. In this period also the first boys' secondary school was located in Sarat Abidah town in 1973 to provide for the further education of boys going through the intermediate schools which had already opened. During the second half of the 1970s more boys' intermediate schools were set up in other larger mountain villages, generally by adding classes to existing elementary schools. However, no new secondary school was created in this period. Much more investment occurred at this level in the first few years of the 1980s. Eleven schools were created in the study area

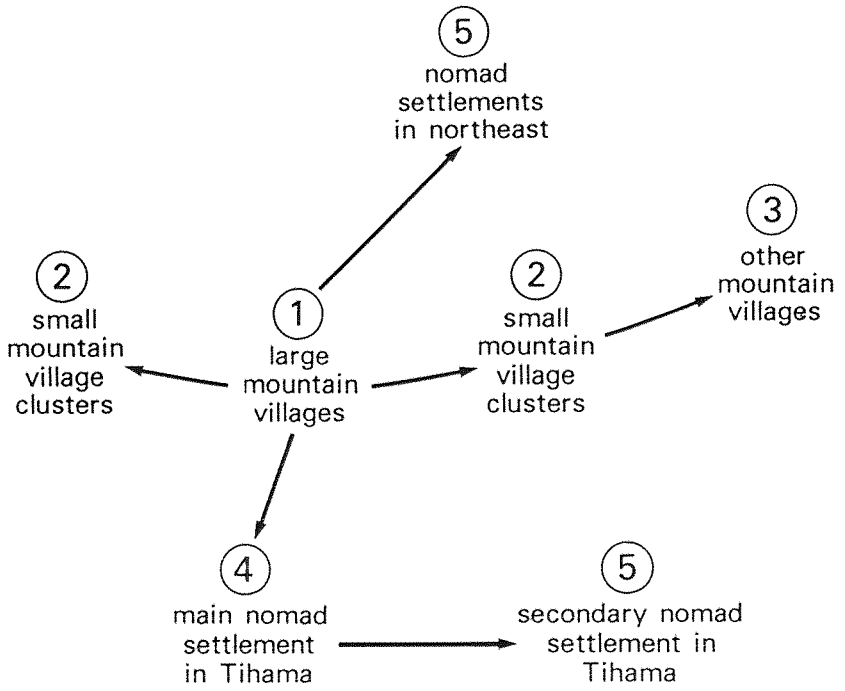


Figure 11.2 The spread of Boys Elementary Schools in the subregion

between 1980 and 1985. Seven of them were intermediate schools including the first intermediate school to be located in the Tihama area at Alfarashah in 1983. The other six were set up in the well-settled mountain areas. Four secondary schools were opened in the main mountain village centres of Alharajah (1980), Sabat Bani Bishr (1981), Alrofghah (1983) and in Jwof Almamer (1984).

The pattern of girls' schools development for the study area, shown in Fig. 11.4, indicates some similarities with the earlier growth stages for boys' schools. But the pattern is much confined to the main mountain zone with the outer, remote villages not yet served or only served very recently. The first girls' primary school was created in Sarat Abidah town in 1969 twenty years after the first boys' school. Then in the 1970s five primary schools for girls were set up in the large cluster villages of Alasran, Aljldah, Alabis, Alharajah and Alfayed, followed by seven more in other

mountain villages in which boys' school had already been opened. The first girls' intermediate school was established in Sarat Abidah town in 1975, nine years after the subregion's first intermediate school for boys was set up there. By 1980 the General Presidency For Girls' Education had recognized the shortages of schools for girls in the area, so that no less than 24 primary schools were set up in mountain villages where it was believed that catchment areas were large enough to support them. The first girls' school in the Tihama opened in 1983 in Alfarashah, seven years after the boys' school was opened there. Four intermediate schools for girls were also opened in the early 1980s in the main populated area of the mountains where elementary schools already created a demand for them. Then in 1987 the first secondary school for girls was established in Sarat Abidah town to serve girls from the surrounding intermediate

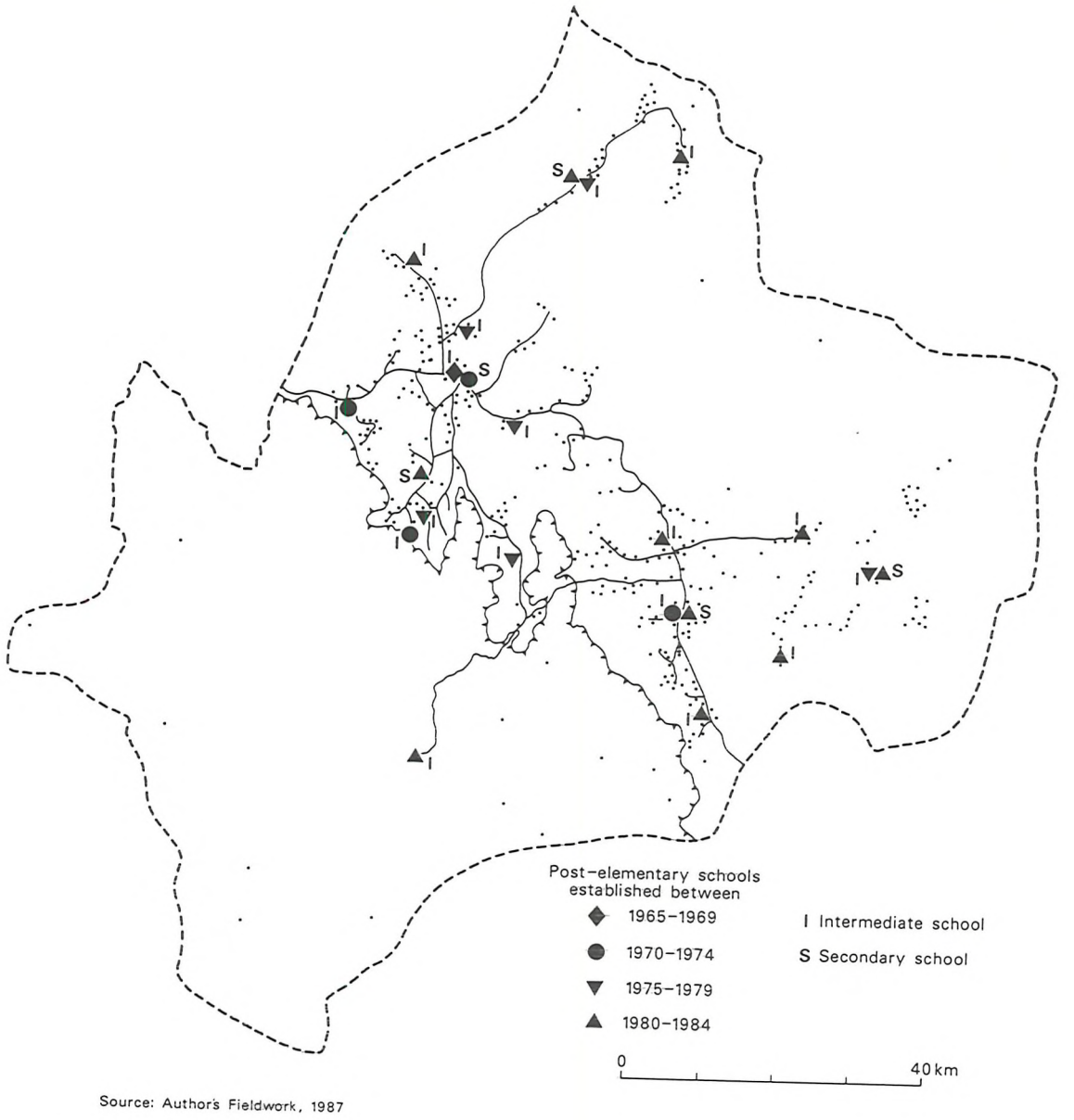
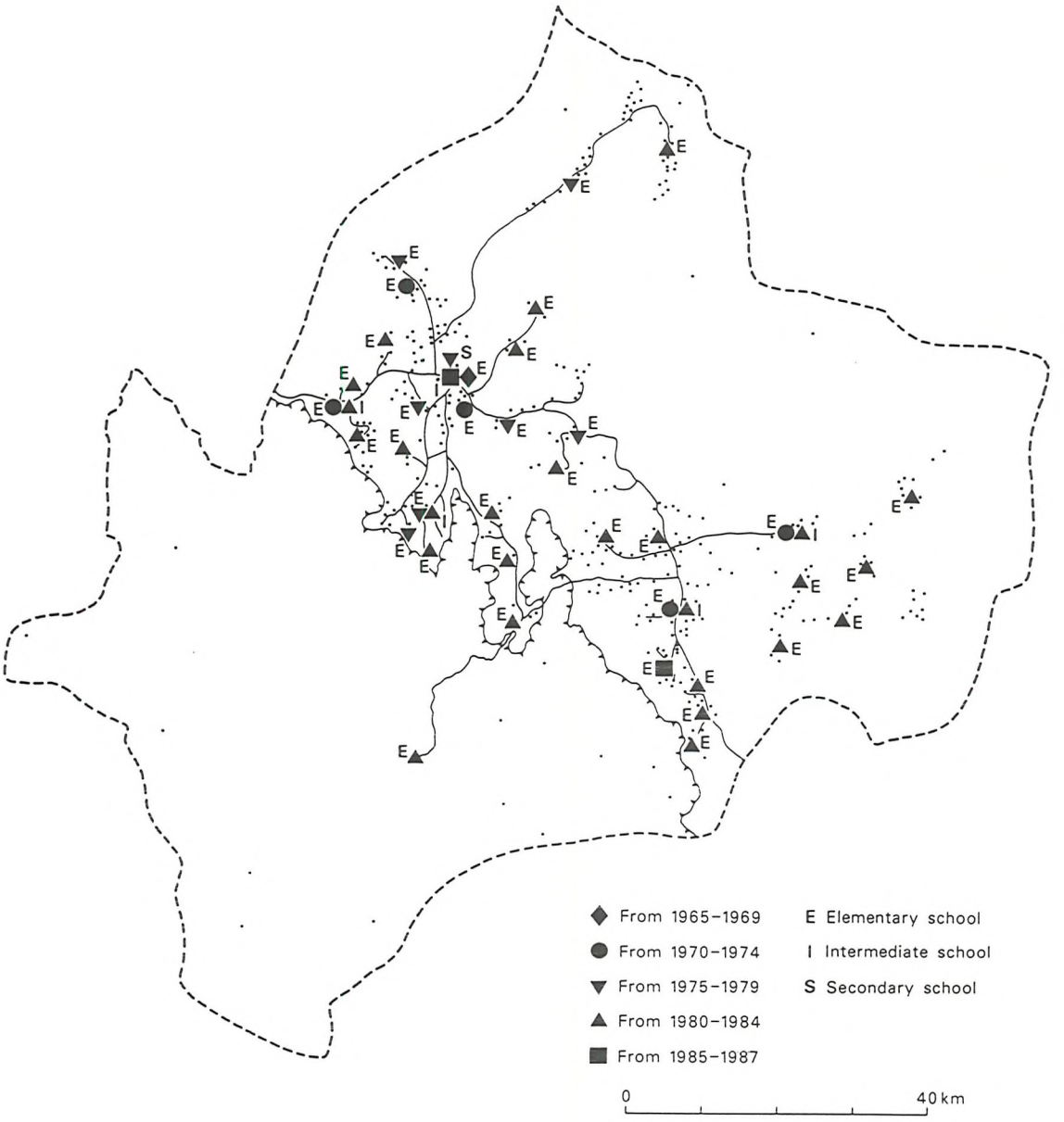


Figure 11.3 The pattern of Boys Intermediate and Secondary Schools development in the subregion, 1965–1984



Source: Author's Fieldwork, 1987

Figure 11.4 The pattern of Girls School development in the subregion, 1965-1987

schools.

11.5 PRIMARY LEVEL

11.5.1 CATCHMENT AREAS

Having examined the development of the school system, it is now necessary to see how far it is meeting the educational needs of the study area. As already mentioned the national objective in primary education is to provide a free education to all children through six years starting at the age of six year old, and to encourage students to continue their education on further wherever facilities can be provided. To achieve this the general policy of the government at the present time is to provide education to as many younger children as can be reached by a wide scatter of schools, even small single teacher primary schools if the number of children warrant no larger units.

No data exist on the number of school age children in each village in the subregion and the number of them that attend school. The only test of whether the education needs of the area are being met is to estimate how many children get to schools. For this it is sensible to examine the catchment areas of the schools in the subregion. A series of maps (starting with Fig.11.5 and 11.6) have therefore been constructed based on the author's field data obtained by finding out the home villages of students attending each school. Each line drawn from a village to the school can represent any number of pupils from that village who go to that school. The maps do not indicate where boys and girls eligible for primary schooling are found. They only show those that go to particular schools.

Another difficulty is the case of the 25 boys' schools in the Tihama. Data on pupils' home villages could not be obtained because there are no permanent settlements around these schools. Students come from various nomadic sites which change location from time to time. The same applies to the two boys' elementary schools in the northeast of the subregion which also serve nomadic communities so that Fig. 11.5 is necessarily incomplete.

It has already been shown that primary schools for boys are now distributed widely across the subregion even in the nomadic areas in which there are often very small numbers of pupils. In the main mountain zone of settlement the pattern of schools varies somewhat in density according to the density and size of village settlements. Fig. 11.5 shows that this affects the sizes of school catchment. In some cases schools are found in villages near to each other and catchments are very local. In other parts catchments are a little larger. Around Sarat Abidah town, for example, schools are close to each other with small catchment areas, whereas in the northern parts around Alarquayn and around Alharajah and Alfayed in the east, the schools are more widely spaced and have larger catchment areas, because the villages here are smaller and more widely spaced. But all villages in the mountains now lie within the catchment of a boys' elementary schools, although distances that some young children have to cover to go to school often exceed five km. In the outlying villages the proportion of children sent to school tends to decrease although the writer has no systematic data on this. In his survey the writer found only one village, Alamarah, in the far northwest from which no primary age boy was going to school. Undoubtedly in the nomad areas, for which the writer could get no data on catchments, many boys do not attend primary schools.

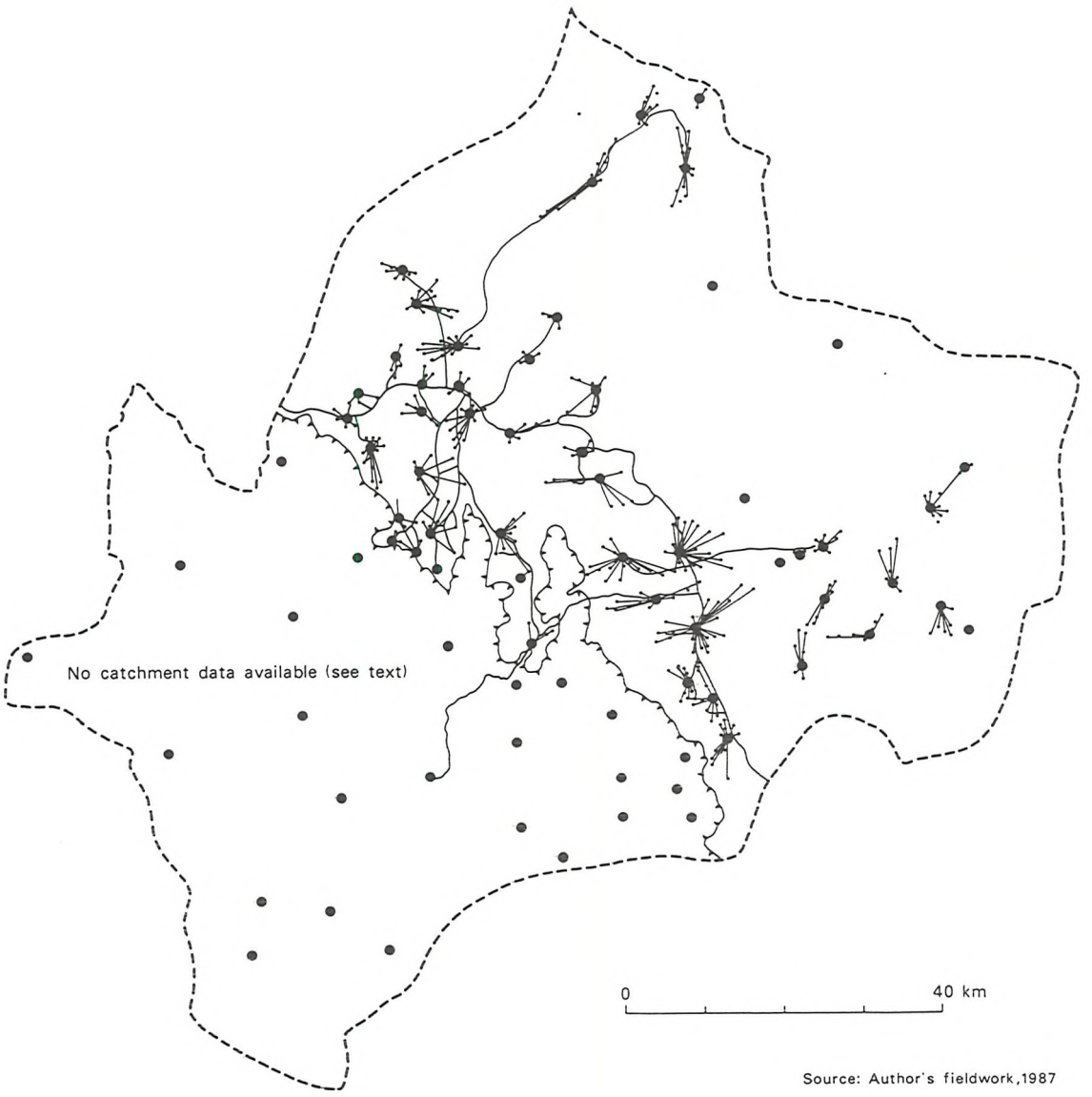


Figure 11.5 The catchments of Boys Elementary Schools in the subregion, 1987

The distribution pattern of girls' primary schools and their catchments is shown in Fig. 11.6. This reveals that with fewer schools they are distributed much more according to the degree of local village agglomeration. The more densely populated cluster of villages in the main mountain zone has a larger number of schools than the northeast part in Alarquayn and Alfayed subemirates. The incompleteness of the network of girls' schools compared with the boys' system is seen in the Tihama where there is only one primary school for girls located in Alfarashah, the main centre of the Tihama. No data could be obtained on its catchment area.

Because there are fewer girls' schools than boys' school in the subregion at the primary level, the catchment areas of these schools are larger and many girl students have to travel longer distances to schools compared with boys. Many more girl pupils than boys have to go to schools outside their own villages or beyond the next village. This situation is made worse because some girls' elementary schools have classes for only the first three grades rather than the full six levels so that some girls may only get a partial elementary schooling. This results either from the lack of teachers or a shortage of students to support a full range of classes where the school is newly established and there are insufficient girls able to enter the upper classes. Fig. 11.6 shows that several villages still seem to lie outside the catchment of the girls' schools and not all of these are in the Tihama. Some are in the main mountain zone of settlement.

11.5.2 RELATED PROBLEMS

The opening of many girls' elementary schools in recent years has narrowed the lead established by boys' elementary

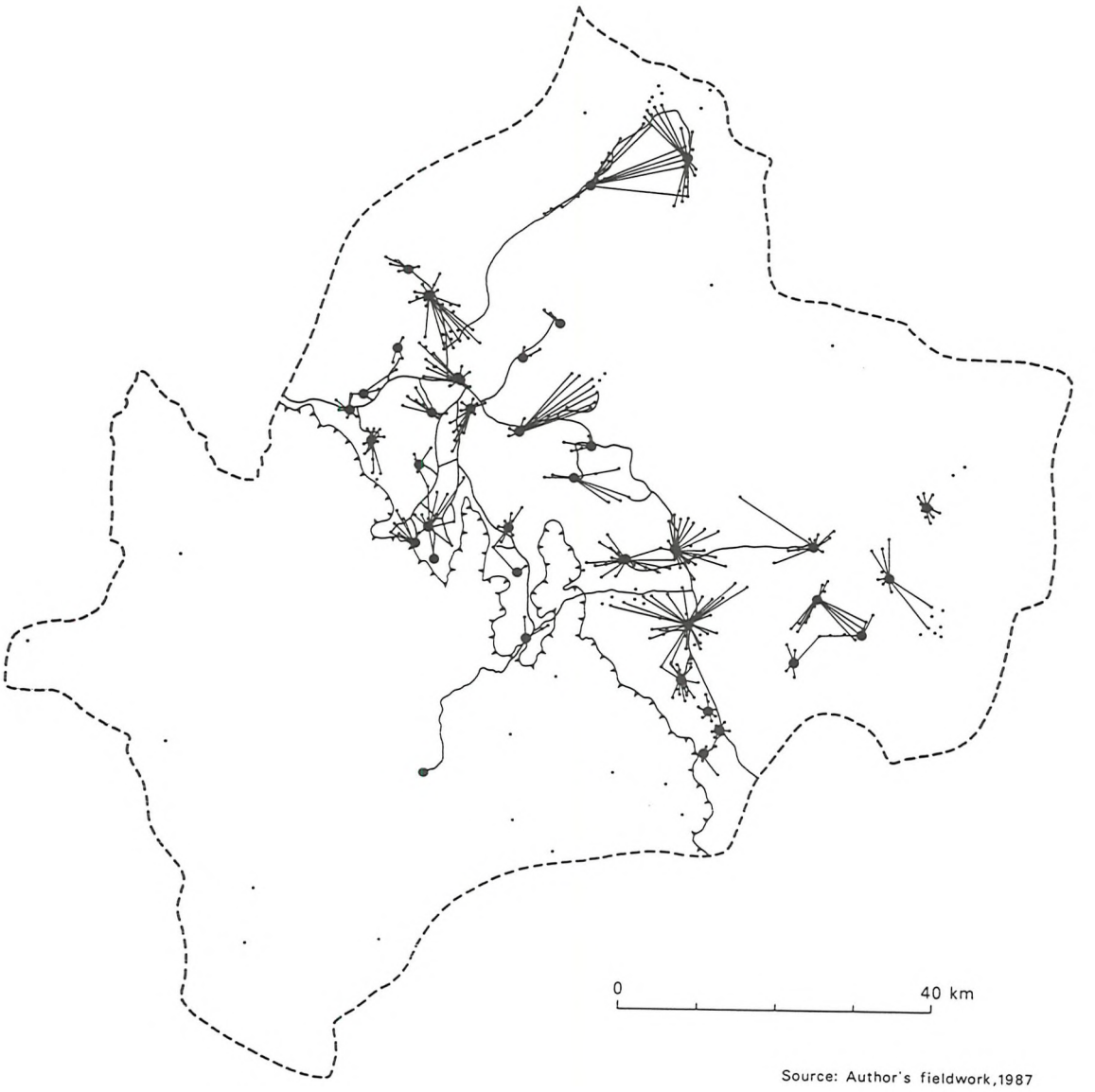


Figure 11.6 The catchment pattern of Girls Primary Schools in the subregion, 1987

education, and made many more schools accessible to girls. But a further breakdown of the data shows that, on the bases of average school and class size, boys' schools are generally smaller and more fully staffed than girls' schools, so that girls not only have to travel further to school but many get less supervision in their studies at school.

Table: 11.5

Primary education in the Subregion, 1987.

	Boys' Education		Girls' Education	
	Number	%	Number	%
Schools	77	68.0	37	32.0
Classes	426	77.7	205	22.3
Students	5001	57.4	3709	42.6
Teachers	490	65.8	255	34.2

Source: The records of the subregion's primary schools, 1987.

Table 11.5 shows that of the 114 elementary schools in the subregion in 1987, 68 percent were for boys compared with 32 percent for girls. But boys represented 57 percent of the elementary school population compared with 43 percent of girls. Boys' schools also had 78 percent of the total classes so that boys tend to be taught in smaller schools and smaller classes than girls. Of course, average school size is rather meaningless when there is so much variation in school size. One boys' elementary school at Aljahfa in the Tihama has only nine pupils whereas Sarat Abidah town school has more than 250 pupils. But on average primary boys are taught in classes of only twelve pupils compared with girls who are taught in classes averaging eighteen pupils. Table 11.6 shows that average class size falls through the primary school grades but is, at all grades, larger in the

Table: 11.6

Elementary school enrollments by level and class in the subregion, 1987.

Grade	Boys' Schools			Girls' Schools			Total		
	No. of		Average Class Size	No. of		Average Class size	No. of		Average Class Size
	Class	Pupil		Class	pupil		Class	Pupil	
Grade 1	77	987	13.9	41	843	20.6	112	1830	16.3
Grade 2	75	848	11.3	40	712	17.8	115	1560	13.6
Grade 3	72	870	12.1	38	763	20.1	110	1633	14.8
Grade 4	73	832	11.4	32	551	17.2	105	1383	13.2
Grade 5	71	822	11.6	30	454	15.1	101	1276	12.6
Grade 6	64	642	10.0	24	386	16.1	88	1028	11.7
Total	426	5001	11.7	205	3709	18.1	631	8710	13.8

Source: The records of the subregion's primary schools, 1987.

girls' schools than in the boys' schools. This probably means that girls get less individual attention than boys at this important early stage of education.

Where class size is small and teachers are in short supply, the joining of children of different grades into a single class is a solution that may also harm the children's progress. This might appear to be more likely to happen in the boys' schools where class size is often already small. In fact this seems to be as common a problem in the girls' as in the boys' schools, and especially in the more rural areas where school and class sizes are often smallest and teachers are in least supply.

The author's fieldwork showed that nearly all of the Tihama schools have some joint classes, because of small number of pupils and teacher shortages. For instance, the boys' schools at Alim Mokathb, Alquah and Khashm Angar join the first and second grades into single classes, and similarly the third with the fourth, and the fifth with the sixth grades. Aljahfah's school for boys in the Tihama area joins the first three grades in one class and the last three grades in another class. Nineteen boys' schools of the 54 in the mountain area have some joint classes. Although classes in the girls' schools are bigger, twelve of the 37 girls' schools have joint classes as a result mainly of teacher shortages. Some of the girls' classes exceed 45 pupils as a result. This was found in the first three classes of the schools at Sarat Abidah town, Alwahabah and Alfarashah because of lack of teachers and shortage of space.

11.5.3 DISTANCE TRAVELLED TO PRIMARY SCHOOLS

Gould (1978) has shown that data on the distance a pupil has to travel to school is an important measure of school

accessibility and schooling opportunity. It was shown in an earlier part of this chapter that elementary school catchments are smaller in the main mountain zone than in the Tihama, and smaller around boys' primary than girls' primary schools. But these catchment maps do not properly define the distance that most children travel to school. They only show the villages served by particular schools.

Data was therefore collected from individual schools on the distances primary students have to travel to schools in the study area. This data is based on head teachers' responses in 64 schools. Table 11.7 gives the percentages of students at stated distances from their schools. It shows that for boys and girls together the majority are fairly accessible to the nearest school. 29 percent of the area's primary age students live within two km of a school and 63 percent within four km. But a significant minority of pupils are remote from their nearest schools. 31 percent have to travel between four and ten km and another 5 percent more than ten km to their schools. In some mountain areas a small number of children travel up to twenty km to schools.

It is clear that journey lengths for girls tend to be greater than for boys as a result of the smaller number of girls' schools and their distribution. More than 69 percent of boys live within four km of their school compared with 57 percent of girls. Similarly whereas only about 3 percent of boys have to travel over ten km to school, the proportion rises to 8 percent for girls.

In view of the much greater number of boys' elementary schools than girls' schools, it is at first a little surprising that the differences in travel distances for boys and girls are not greater. The reasons for this are that most of the additional boys' schools are found in the closely spaced mountain villages, so that fewer boys than

girls have to travel out of their villages to go to a school in the next village. This is seen in Table 11.7 where 38 percent of the boys travel less than two km to school compared with only 19 percent of girls. In turn this helps to explain why boys' schools, and classes in boys' schools, are smaller because many villages have too few boys to support bigger schools and classes. A second point to bear in mind is that the writer only obtained data from the schools on the home location of their pupils. Children not sent to school are excluded from the analysis and this therefore excluded more girls than boys. Whereas most boys now enjoy an elementary education in a local school many parents still do not send their daughters to school especially if the school is far from where they live, so that the proportion of girls who live at a considerable distance from the nearest school is probably much greater than the data in Table 11.7 indicates.

Table: 11.7
Distance travelled by boy and girl pupils to primary schools in the Subregion, 1987 (percent).

Distances (km)	Boys	Girls	Subregion Total
< 2	38.4	18.6	28.9
2 - 3.99	30.9	38.5	34.6
4 - 5.99	16.6	23.3	19.8
6 - 7.99	9.6	10.3	9.9
8 - 9.99	1.6	1.7	1.7
> 10	2.9	7.7	5.2
Total	100.0	100.0	100.0

Source: Author's fieldwork, 1987.

Because of the accessibility problem for many young children in the subregion, the government provides free transportation to and from school for all students who live

over two and half km from the nearest school. From the writer's analysis of school data it is found that about 51 percent of boy pupils come to schools by school transport compared with 49 percent who come on foot or by their parents' transport. The percentage of girls using school transport is much higher at 75 percent because more have to travel further. Even though school transport is widely available and is used by the majority of pupils, there are many problems with the system. Many parents and pupils commented that journeys are uncomfortable and sometimes unsafe because of the types of vehicles used and the lack of good roads in many parts of the study area, particularly in the Tihama.

11.5.4 THE PROPORTION OF PRIMARY AGE CHILDREN IN SCHOOL

Part of the aim of this analysis is to see how well government policy to provide universal primary education is succeeding in this area. From the fieldwork data so far presented it appears that this policy is nearly achieved for boys in the mountain part of the subregion, but not in the Tihama, and not yet for girls. Some confirmation of this can be gained from comparing the number of primary age boys and girls at school in the subregion and the number of children of that age thought to live in the subregion in 1987. One must bear in mind that there is no data source on the size and distribution of the age groups. The total population of the subregion was estimated at 100,198 in 1983. Nearly 52 percent of them were females and 48 percent male. We can assume from Scan Plan (1982) that about 9 percent for each sex of the total population was aged between six and eleven years, the elementary school ages. Table 11.8 gives a figure of 4,329 boys and 4,689 girls of that age in the subregion

in 1983.* If one allows for a growth in the population of 4.1 percent per year between 1983 and 1987 these totals would have risen to 5,083 boys and 5,507 girls.** If this estimate for the boys' population is compared with the enrollment of 5,001 boy pupils, this means that there are about 98.4 percent of boys studying at the primary stage. Several reasons can be stated for the 82 (1.6 percent) boys not enrolled in the area's primary schools. Many parents still live a nomadic or semi-nomadic life and lack enthusiasm for education. This is especially common amongst the Tihama nomads where, inspite of the recent spread of boys' schools, many boys are still far from a school. It must also be remembered that this is a very crude estimate of the boy population and 82 may be an over or under estimate.

The situation for young girls is much clearer. Of the estimated 5,507 girls aged six to eleven in the subregion, there were 3,703 attending primary schools in 1987, which represents about 67.2 percent of the total girls in this age group. The Tihama is especially deficient in girl's schools. With over 1,400 girls of primary school age in the Tihama only about 10 percent are enrolled at Alfarashah and Aljawwah girls' schools, leaving about 90 percent without primary education. The fact that such a large proportion of girls do not attend primary schools is due to many factors, especially the attitude of families that the place of the daughter is the household. Even in the mountains many young girls do not attend school. The long distances that many

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* The Scan Plan (1982) which prepared a master plan for Abha estimated the primary school children at 9 percent for each sex of the total population.

** Asir Emirate Study (1983) estimated the natural increase of the population to be at 4.1 percent per year in the subregion of Sarat Abidah.

Table: 11.8

Estimated number of elementary school children in the Subregion, 1987.

	Male	Female	Total
Total number of population in 1983.	48,095	52,103	100,198
Estimated number of children aged six to eleven in 1983.	4,329	4,689	9,018
Estimated number of primary age school children in 1987.	5,083	5,507	10,590
No. of students attending primary schools in 1987.	5,001	3,703	8,704
No. of children not attending primary school in 1987.	82	1,804	1,886
Percentage of children not studying at primary schools in 1987.	1.6	32.8	17.8

girls are from schools in some parts of the mountain area (See Fig. 11.6) also deter many families from schooling for their daughters and even if the school is near, many families find it socially unacceptable for their girls to walk to school if school transport is inconvenient or unavailable.

11.6 INTERMEDIATE LEVEL

The intermediate stage of schooling comprises three grades serving the ages of twelve to fourteen years. Children can only attend this level of education as holders of a primary school certificate, so that one expects fewer children of each year group to proceed this far up the educational ladder. Intermediate schools offer more specialised teaching and represent a larger investment than primary schools so that they are situated in fewer central locations where there are enough primary school leavers to support them.

Fig. 11.7 shows the catchment patterns made by the seventeen boys' intermediate schools in the subregion. They are mainly located in the large and well populated mountain villages. Their large catchment areas serve the majority of the settlements. For example, Sarat Abidah town has one intermediate boys' school which serves several surrounding villages sometimes more than 25 km away. Similar sized catchments exist for the other schools. In the Tihama area there is only one intermediate school situated in Alfarashah. This serves settlements more than 60 km away. Fig. 11.7 shows that there are a few settlements in the mountain and Tihama areas from which no pupils came to the schools in 1987. This is either because these places are too remote from the existing schools or they do not have

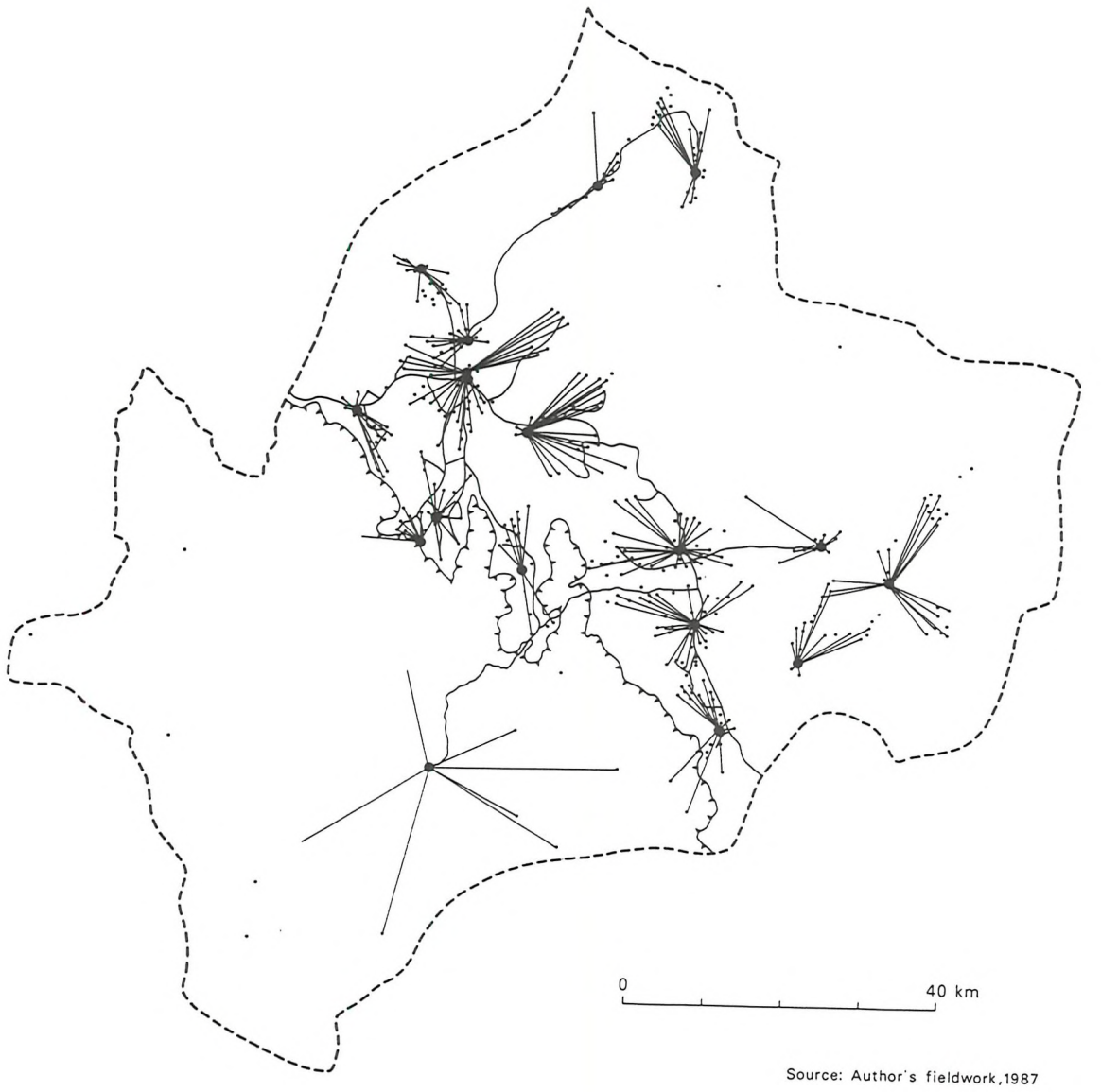

Figure 11.7 The catchment pattern of Boys Intermediate Schools in the subregion, 1987

children who have got the primary certificate. They are therefore not eligible to go to an intermediate school, generally because primary schools have only just be set up in these areas.

The pattern of girls' intermediate schools shown in Fig. 11.8 reveals a strikingly low provision at this stage of education with many villages sending no girls to the nearest school. There are only five intermediate schools in the subregion for girls. These are located in the large mountain settlements including the town of Sarat Abidah and the village clusters of Alabiydyah, Alasran, Alharajah and Alfayed. A girls' primary school was established in each of these centres several years ago to provide a suitable catchment for those newer intermediate schools. But with so few girls' intermediate schools few settlements are very close to them. Most of the villages around Sarat Abidah town are accessible to the school there as are a few others in the mountains close to the other four schools. Distance, or lack of transport, or lack of a primary schooling clearly make it impossible for many girls to enter this level of education. Thus there is an outstanding inequality in intermediate education opportunities for girls in contrast with the situation for boys.

It is also worth noting that all of these intermediate schools, except for those in Sarat Abidah town, are really only two or three classes attached to the elementary school and often share staff and facilities. Thus most of the boys' intermediate schools had less than 50 pupils each in 1987 except for that at Sarat Abidah town with 224 boys. The same pattern exists in the girls' schools. Although Sarat Abidah's girls' intermediate school takes 389 pupils, the others take less than 50 pupils each.

The distance that students who attend this level of

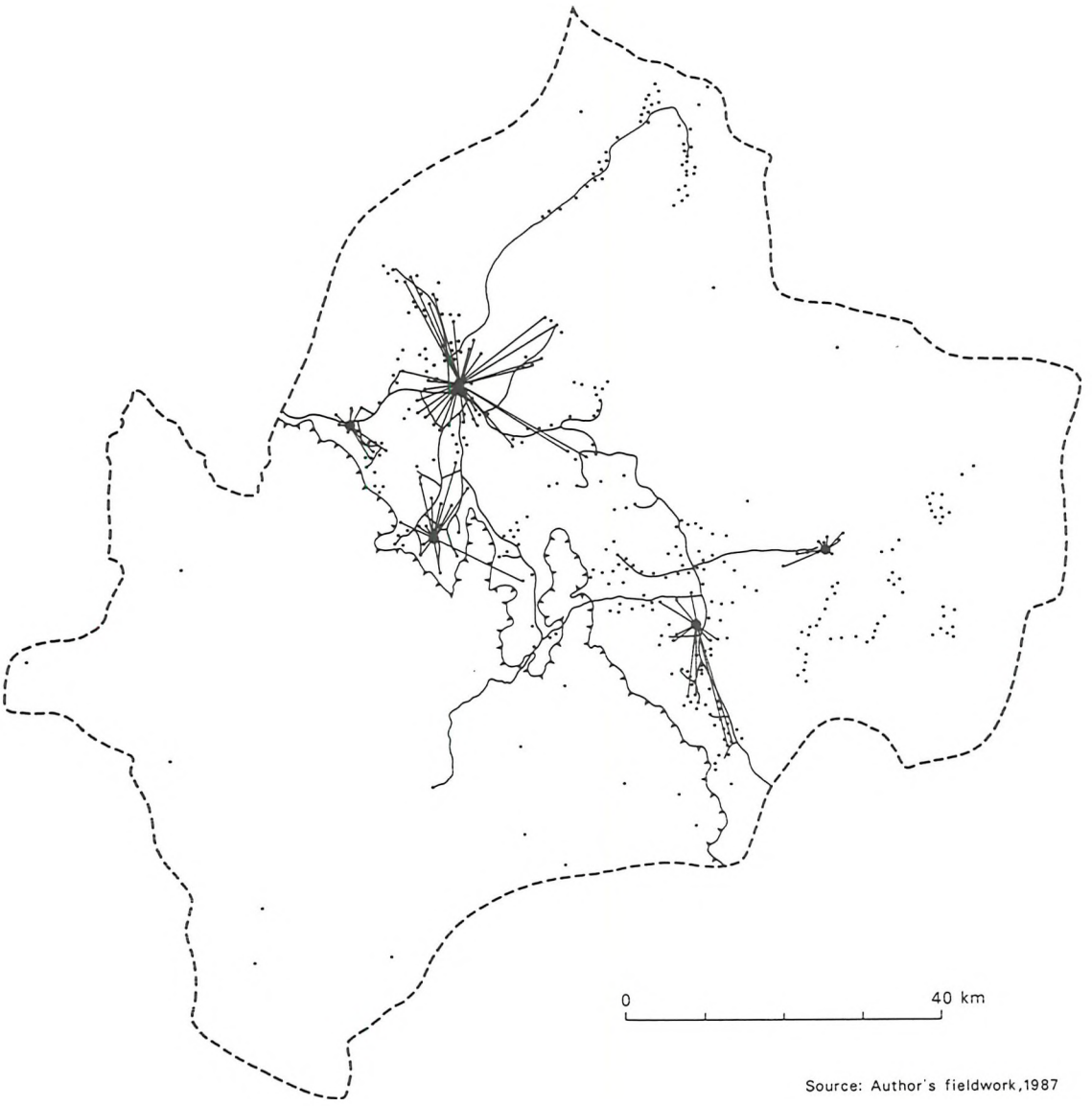

Figure 11.8 The catchment pattern of Girls Intermediate Schools in the subregion, 1987

schooling have to travel in the subregion is shown in Table 11.9. Overall the pattern is similar to that for primary age children except that the average distances are a little greater. 30.4 percent of the area's pupils live quite close to their school at a distance of less than three km. 52 percent of them were found to live less than five km away. A little more than a third of the students live at a distance of five to eleven km, leaving 13 percent who were more than eleven km away. But some of these come to school from over 30 km away.

Table: 11.9

Distance travelled by boy and girl pupils to intermediate schools in the Subregion, 1987.

Distance (km)	Boy pupils		Girl pupils		Total	
	No.	%	No.	%	No.	%
< 3	385	27.7	220	39.9	605	30.4
3 - 4.99	289	20.8	139	23.3	428	21.5
5 - 7.99	256	18.4	205	34.4	461	23.2
8 - 10.99	232	16.7	7	1.2	239	12.1
> 11	229	16.4	25	4.2	254	12.8

Source:Author's Fieldwork, 1987.

As one would expect there are differences in the distances that boy and girl pupils travel to schools, with so few schools available for girls. But the difference is muted by the fact that girls in more remote villages are simply not attending these schools in large numbers. As Table 11.9 shows 28 percent of boy students attend intermediate schools in their own villages or in neighboring villages less than three km away. An even higher proportion of girl pupils (37 percent) come from close by. In contrast 33 percent of boys come more than eight km to school compared with only 5 percent of girls. With so few

intermediate schools for girls, and girls less able to travel greater distances, it is not surprising that the proportion of girls of this age attending school is much lower than boys, and that most of the girl pupils live near the school.

School transport is provided by the educational authority for intermediate pupils who live more than three and half km from a school just as transport is provided for primary age children who live more than two and half km from a school. But there must be at least five children in a village needing school transport for it to be provided. This means that many pupils in small villages cannot get school transport.

The writer found in his survey that 846 boy pupils, about 61 percent of the total boys enrolled in intermediate schools in the study area use school transport compared with 39 percent who come to school either on foot or by their parents' transport. 437 or 73 percent of girls in intermediate schools used transport provided by the educational authority. Only 159 girls (27 percent) walked to school or were transported by their parents.

With intermediate schools so widely spaced some pupils were found to live more than 25 km from the nearest intermediate school. For these the Ministry of Education gives a subsidy of about SR 600 per month to be accommodated elsewhere nearer to school. The writer's survey found 21 boys were boarded outside their villages in order to be nearer to their intermediate schools. These pupils attended either the school at Alfarashah in the Tihama or Alawran in the mountain zone.

It is clear from this analysis that government policy to increase the rate of enrollment for boys and girls in intermediate schools, until all children benefit from this

level of education, is still far from being reached. If we assume that 3.7 percent of the total population were aged 12 to 14 years, the intermediate school ages, then we find that there are about 1,780 boys and 1,928 girls aged twelve to fourteen years in the study area (Table 11.10) in 1983.* With an estimated 4.1 percent annual growth rate in the population between 1983 and 1987 then the total would have increased to 2,090 boys and 2,264 girls. This means that about 67 percent of the boys in this age group attend intermediate schools.

Table: 11.10

Estimated number of intermediate school children in the Subregion, 1987.

	Male	Female	Total
Total population in 1983.	48,095	52,103	100,198
Estimated number of children aged 12 to 14 years in 1983.	1,780	1,928	3,708
Estimated number of intermed. school age children in 1987.	2,090	2,264	4,354
Enrollments at intermed. school in 1987	1,391	596	1,987
No. of children not attending intermed. schools in 1987.	699	1,668	2,367
Percentage of children not attending intermed. school in 1987	33.4	73.7	54.4

However, the proportion of girls attending intermediate schools is much lower at 26 percent. The reasons why the

* Scan Plan (1982) estimated the number of boys and girls in the 12 to 14 years age-group each to be 3.7 percent of the total population.

numbers of girls attending the intermediate schools are much lower than for boys have been mentioned. Most important is the limited number of girls who have the elementary school certificate because of the more recent development of primary schools so that many girls of intermediate age missed out on primary schooling. Secondly there are the longer distances girls would have to go to school and because school transportion is provided only for villages which have more than five students, many girls are not able to get school transport from their villages.

11.7 SECONDARY LEVEL

The secondary schools serve students in the age group of fifteen to seventeen years old. Government policy was aimed during the Second development plan (1975-1980) to enrol into the secondary schools at least 50 percent of the intermediate leavers of both sexes, although this is not yet being achieved in this subregion. Because secondary schools need a large investment and more skilled teachers to cover a wider range of subjects than at the primary and intermediate levels, this stage of the education service is the least developed and the six schools (five for boys and one for girls) in the subregion are only found in the main centres - at Sarat Abidah town and in the villages of Sabat Bani Bishr, Alharajah, Alrofghah and Jwof Almamer -where there is a large enough catchment of intermediate school graduates to go on to secondary schooling.

There are no Further Education establishments in the study area such as pre-vocational or vocational training schools, although there are institutes for teacher training for boys and girls in Sarat Abidah town. Because these are attached to the secondary schools they are considered here

as well.

No solid data is available on the total number of students in the subregion who would be able to benefit from secondary education. But it seems likely that about 66 percent of the boys and 93 percent of the girls in the relevant age group do not at present attend a secondary school.* In most cases this would be because they have not had the intermediate level of schooling which is a necessary prerequisite. While levels of attendance would be higher in parts of the mountain zone, especially in the Sarat Abidah area, where intermediate schooling has been available for some years, the number of pupils from the Tihama attending secondary schools is very low because there is no girls' intermediate school there and the single boys' intermediate school only opened there in 1983. Similarly, in the mountain zone secondary schooling for girls lags far behind that for boys because there is only one girls' secondary school in Sarat Abidah town making it impossible for girls with intermediate schooling from, for example, Alharajah to continue their education because of the distance involved.

Table 11.11 shows the limited scale of the development of secondary education in the subregion by giving the number of schools, classes, teachers and students by each sex. The five secondary schools for boys only accommodate 515 pupils enrolled in 26 classes with 48 teachers. The average size of the boys' secondary school is therefore only 103 pupils per school. This is a little smaller than the average size of Asir's secondary schools with about 111 pupils per school.

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* If we take the Scan Plan estimation (1982) that 3 percent of the total population are aged fifteen to seventeen, the secondary school age-group, then this means that there are 1,694 boys and 1,836 girls in the study area in 1987, of which only 34 percent of boys and just 7 percent of girls secure places at the area's secondary schools.

The boys' institute of teacher training in Sarat Abidah town takes the form of a building adjoining the secondary school and trains teachers for junior schools. In 1987 it only had a total enrollment of 63 student in four classes with seven instructors.

Table: 11.11

Secondary education and teacher training in the Subregion, 1987.

	Secondary School		Teacher Training		Total	
	Boys	Girls	Boys	Girls	Boys	Girls
Schools	5	1	1	1	6	2
Classes	26	1	4	5	30	6
Students	515	39	63	89	578	128
Teachers	48	1	7	5	55	6

Source: The records of the Subregion's secondary schools, 1987.

The scale of secondary schooling and teacher education for girls in Sarat Abidah is even smaller than for boys. In 1987 the first secondary class for girls was started jointly with the girls' institute of teacher training in the town of Sarat Abidah with a total enrollment of 128 in six classes with only six teachers. Each is planned to have a separate staff and building should sufficient students come forward.

The restricted number of students able and willing to use the secondary training facilities in the subregion is likely to slow the speed of growth of the secondary and post-secondary sector of education. This can be seen from the reduction in size of classes from the first to the third grade, shown in Table 11.12. Generally speaking the average size of class in the subregion's secondary schools is about 20 students but this varies widely by grade and by school. Table 11.12 shows that with 210 boys enrolled in the nine

Table: 11.12

Gradewise enrollment in secondary education and teacher training in the Subregion, 1987.

Grade	Boys' Secondary		Girls' Secondary		Boys' Teacher T.		Girls' Teacher T.	
	pupil	class	pupil	class	pupil	class	pupil	class
Grade one	210	9	39	1	42	2	32	2
Grade two								
Arts	64	2	-	-	14	1	25	1
Science	87	6	-	-	-	-	-	-
Grade three								
Arts	57	3	-	-	7	1	32	2
Science	97	6	-	-	-	-	-	-
Total	515	26	39	1	63	4	89	5

Source: The records of the Subregion's secondary schools, 1987.

secondary classes at grade one the average class size is 23. This falls to nineteen and seventeen in grade two and three where a difference also appears in the average size of the arts and science classes which are available in these two years. Similarly the third year in the boys' teacher institute in 1987 ran for a class of only seven students, and a class of fourteen in the second year. The boys' secondary schools outside of Sarat Abidah town also tend to be smaller than those in the town because of limited recruitment. Whereas Sarat Abidah secondary school had a class size of 36 in the first grade, Jwof Almamer secondary school only had six pupils in its first grade.

11.7.1 SECONDARY SCHOOL CATCHMENT AREAS

The writer obtained information from the secondary schools and the teacher institutes in the study area on their catchment areas based on the home villages of the students currently enrolled. These catchments are shown in Fig. 11.9, 11.10 and 11.11. Fig. 11.9 shows that boys attending the five secondary schools come from the majority of the mountain settlements but that many have to travel long distances. This is even the case for students attending Sarat Abidah secondary school which serves many surrounding villages as well as the town itself. The great majority of boys attending secondary schools in the major villages travel over five km and many travel much further. There is also some overlap between these school catchments. This is partly related to travel opportunities but also to student preferences for particular schools. The secondary schools at Jwof Almamer and Alrofghah only teach sciences at the second and third grades so that a student wishing to study arts in these years must go to the schools at Sarat Abidah town or

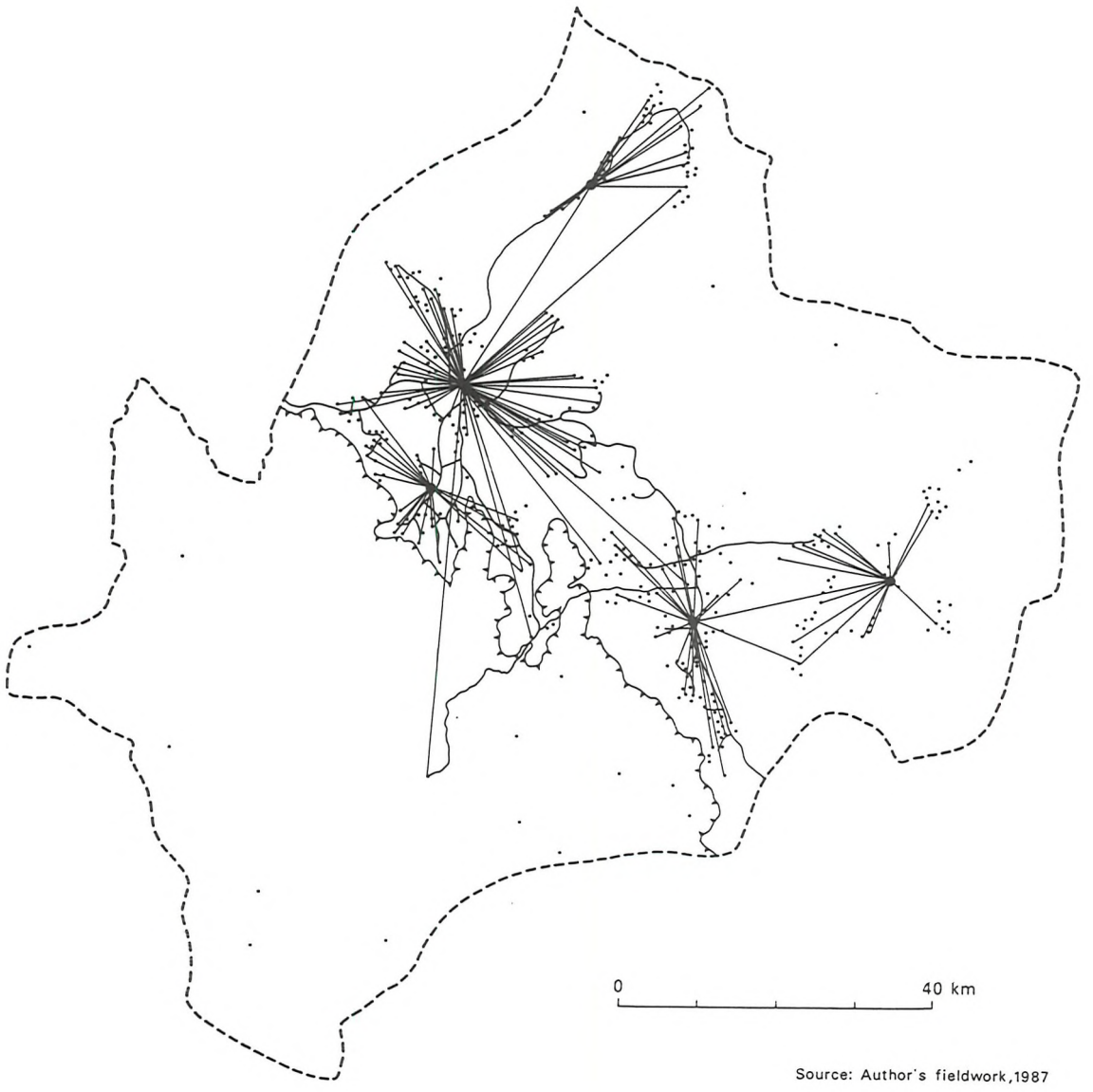


Figure 11.9 The catchment areas of Boys Secondary Schools in the subregion, 1987

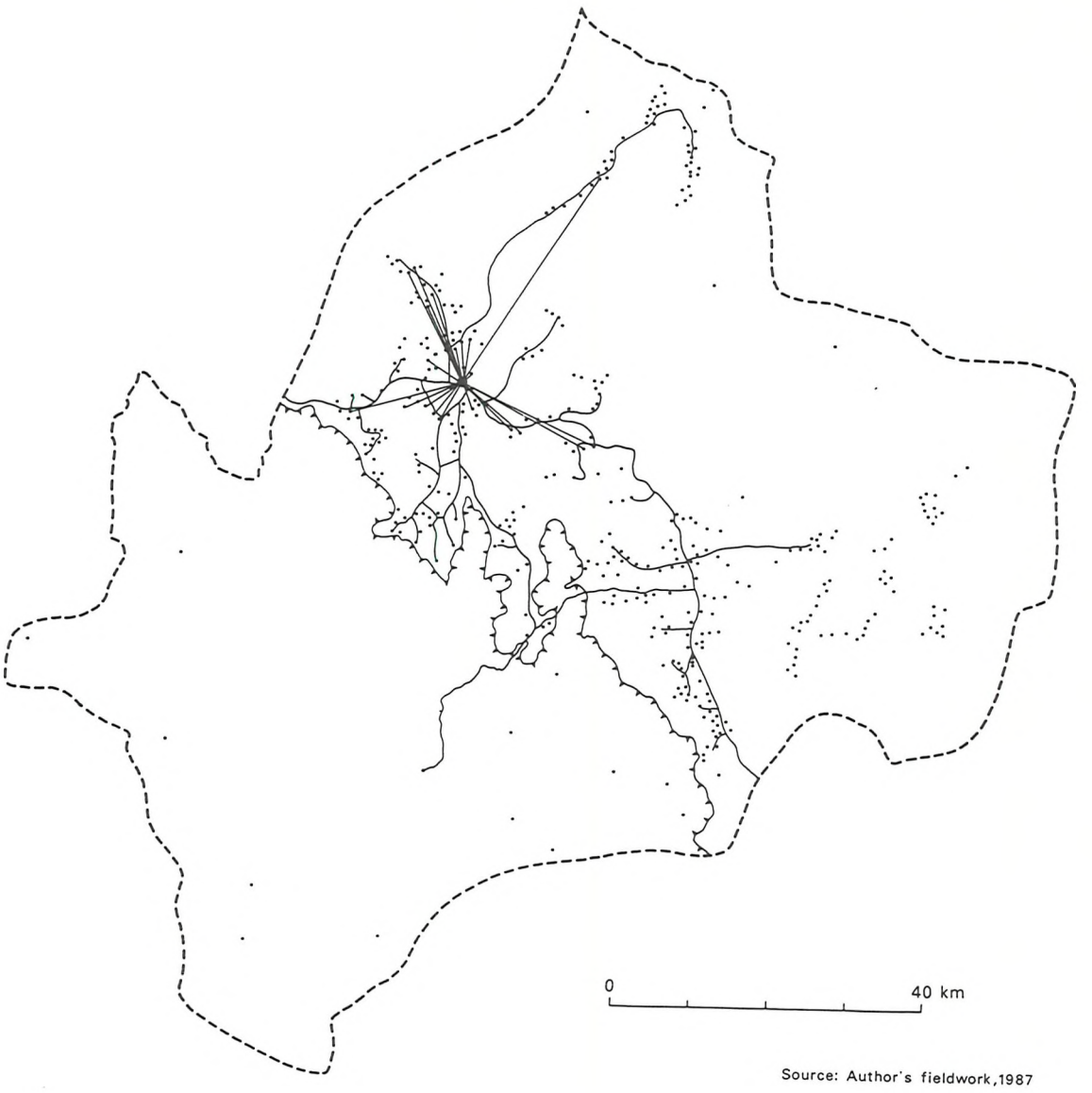


Figure 11.10 The catchment area of the Girls Secondary School, 1987

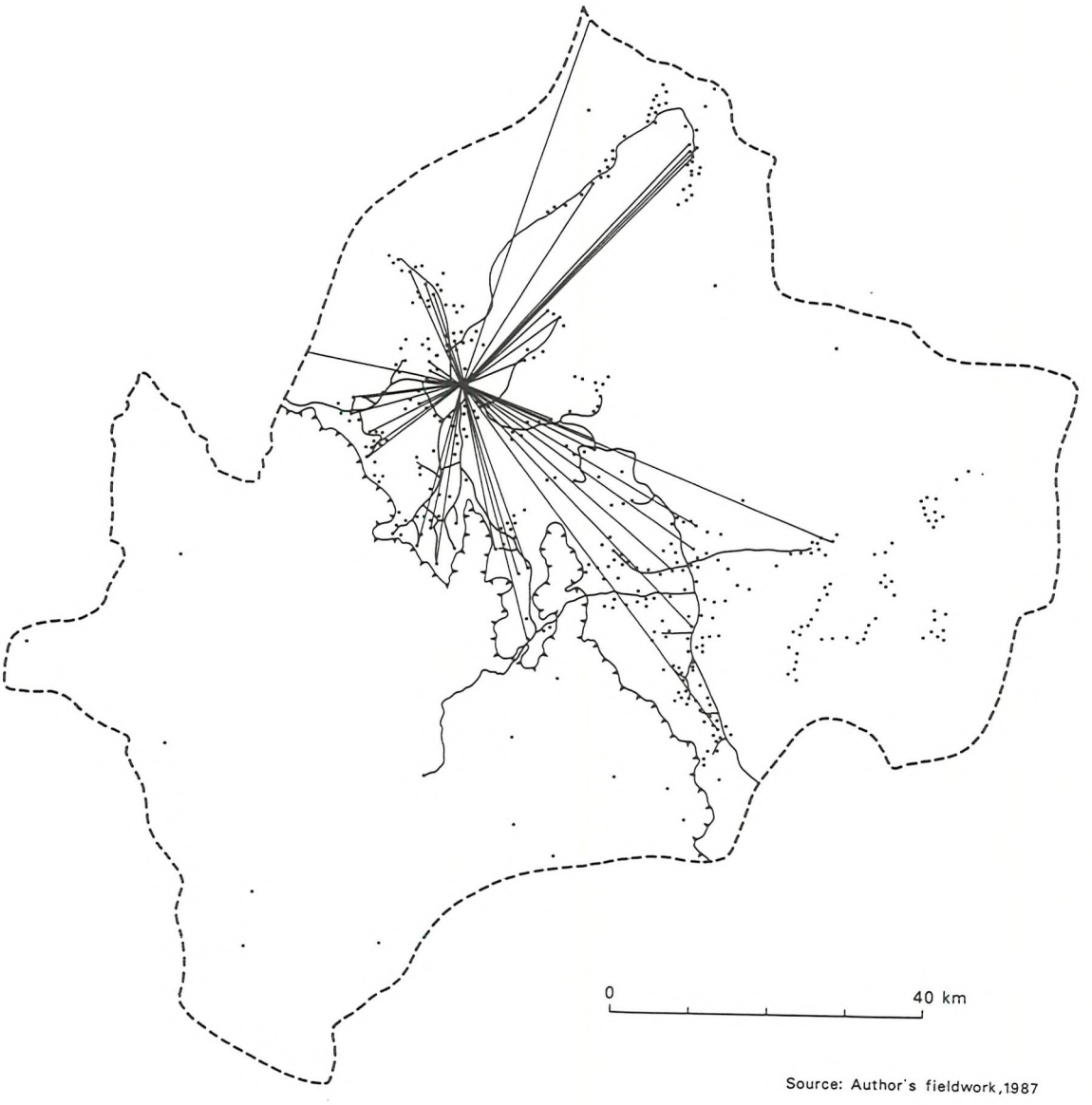


Figure 11.11 The catchment area of the Boys Institute of Teacher Training, 1987

Sabat Bani Bishr which teach both arts and sciences.

Because of the short period during which secondary schooling for girls has been available girls in only a few villages benefit. Fig. 11.10 shows the villages from which girls came to Sarat Abidah school in its first year of establishment in 1987. A high proportion of the girls came from villages close to the town.

Finally the large catchment area of the boys' teacher training institute is shown in Fig. 11.11. Not only do students come from many parts of the mountain zone to this institute. Because there are few facilities of this type in Asir region, several students were noted as coming from outside the subregion at distances of up to 100 km. These boarded in Sarat Abidah town in order to attend the institute. This one small institute represents 8 percent of the places available regionally for teacher training at this level.

With these varied catchments indicated by the figures for these levels of the educational provision in the subregion, it is sensible to try to further analyse them. A questionnaire on distances travelled, mode of travel and related information was distributed to all students (706 pupils) of the secondary and teacher training schools in the subregion. 515 or 73 percent responded to the questionnaire. The result of the responses on distances travelled to school are summarized in Table 11.13. It was found that only 22 percent live within five km of their schools which might be considered as the maximum distance a secondary-age student could be expected to walk to school. On the other hand 53 percent live between six and fifteen km from their schools, and 25 percent live more than fifteen km away. In two percent of cases students live more than 50 km from the school they attend.

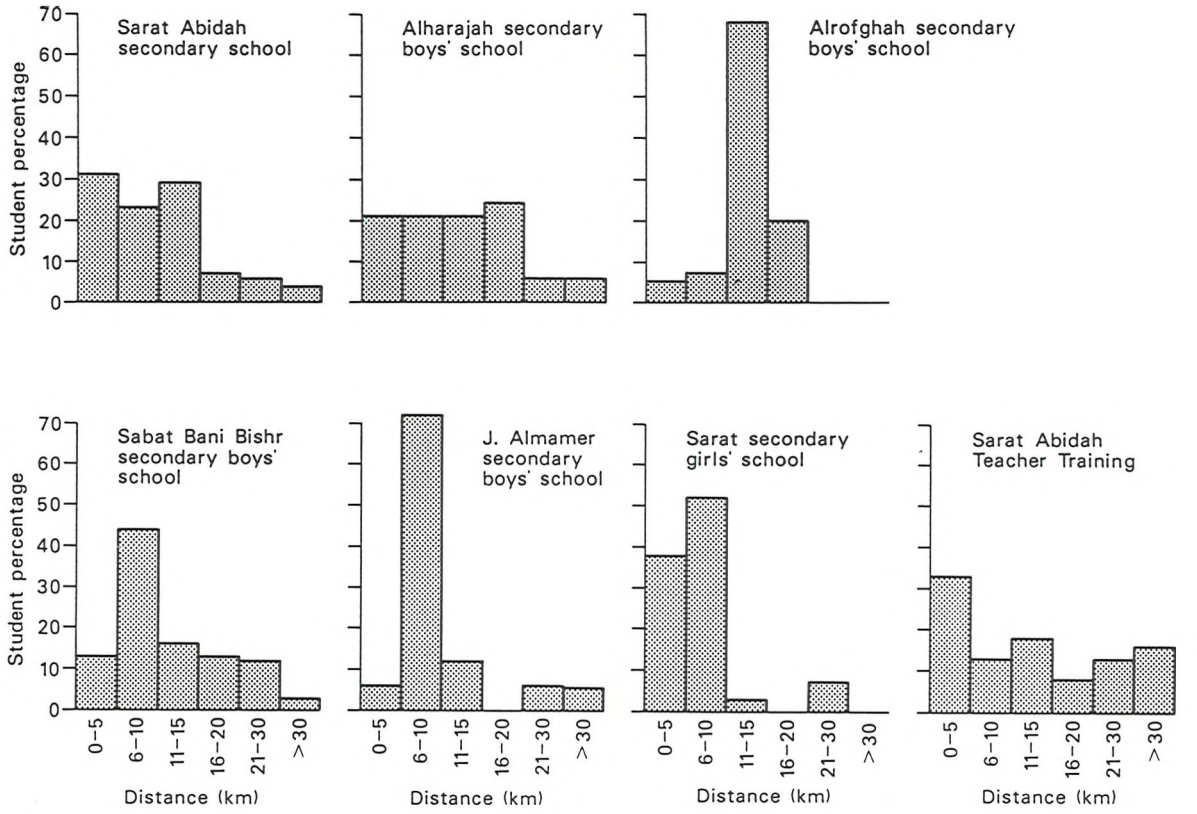
Table: 11.13

Distances travelled by students to secondary education and teacher training in the Subregion, 1987.

Distances (km)	Total responses	Percent	Cumulative Percent
< 1	16	3.1	3.1
1 - 5	99	19.2	22.3
6 - 10	156	30.3	52.6
11 - 15	117	22.7	75.3
16 - 20	54	10.5	85.8
21 - 30	39	7.6	93.4
31 - 40	12	2.3	95.7
41 - 50	11	2.1	97.9
> 50	11	2.1	100.0
Total	515	100.0	100.0

Source: Author's Fieldwork, 1987.

Considerable variations in travel patterns were found amongst the students at different schools. As has been indicated the distances students travelled vary considerably from school to school, largely depending upon the local village settlement pattern. The patterns shown in Fig. 11.9, 11.10 and 11.11 are further detailed in Fig. 11.12 in order to relate them later to methods of transport used. Only in the case of the boys' and girls' secondary schools at Sarat Abidah (and the teacher training institute for boys in the same town) did as much as one third of the students live within five km of their schools. One would expect these schools to have a strong local catchment with students coming from the town's population and large villages nearby. But in three of the other schools - at Sabat Bani Bishr, Jwof Almamer and Alrofghah - the proportion of students living that close to the school fell near to or well below 10 percent. In these areas the village settlement pattern is



Source: Author's fieldwork,1987

Figure 11.12 Distance travelled to the subregion's Secondary Education, 1987

made up of small, dispersed hamlets. At each of these schools the great majority of students travel between six and fifteen km. But it should be noted that many students at the Sarat Abidah schools also had to travel this far from outlying villages.

All seven schools received a few students from over twenty km away, this proportion being largest at the boys' teacher institute at Sarat Abidah, where 16 percent of the students come from more than 30 km away. Even Sarat Abidah boys' secondary school had six student from Aljawwah and three from Alfarashah in the Tihama, living more than 50 km from their homes. Those pupils cannot travel daily to school and so live with relatives or alone in the town in order to attend school.

11.7.2 MODE OF TRAVEL TO SECONDARY EDUCATION

The long distances that many secondary and teacher training students travel to school means that some form of transport is necessary. This is confirmed by the data from the questionnaire summarized in Table 11.14 which shows that only 4.5 percent of pupils come to school by foot. This compares with 3.1 percent who stated that they live within one kilometre of the school so that it is clear that most of those that live within five km of the school (22.3 percent) rely on vehicular transport. It can be assumed that all of those that travel further use vehicles. As a result over 95 percent of students report that they use some form of vehicular transport to reach school.

Two forms of transport dominate, vehicles driven by the pupils and school buses. With car ownership widespread in the subregion and because of the lack of a public transport system, it is more usual for the younger males to drive than

for the older men. As a result many boys learn to drive and often drive to school even before they hold a driving licence. The questionnaire revealed that about 44 percent of the responding students drive themselves to school and another 11 percent come in a friend's car, usually a school colleague from the same village. School bus transport is provided free for students who live over three km from school, but only from settlements where at least five students need it. 41 percent of the students used this facility. Only two students (0.4 percent) used a taxi to transport them to school.

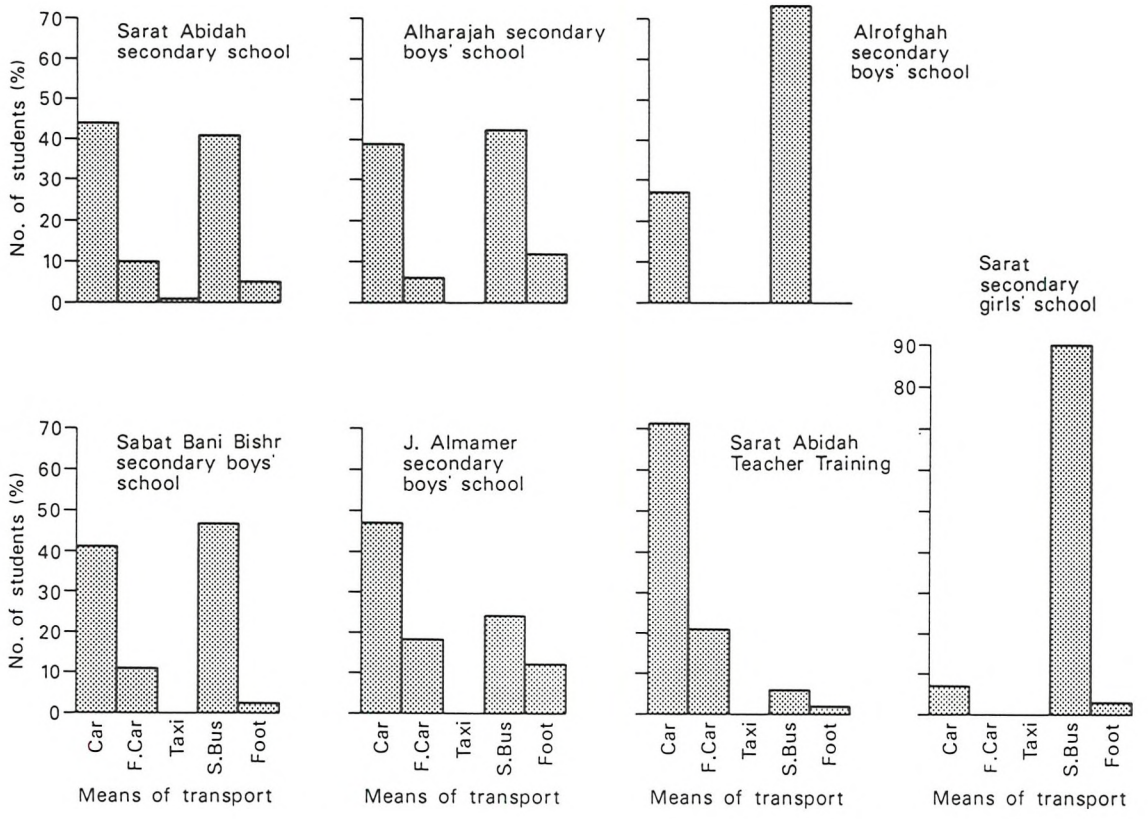
Table: 11.14

Means of transport used by students to come to secondary and teacher training schools in the Subregion 1987.

Transport type	Total responses	percent
Self drive car	225	43.7
School bus	211	41.0
Friend's car	54	10.5
On foot	23	4.5
Taxi	2	0.4
Total	515	100.0

Source: Author's Fieldwork, 1987.

Student cars and school buses have been shown to be the most common means by which students in this age group travel to school, but the survey results display much variation in those travel modes from school to school. These variations sometimes show less relationship to distances travelled than to other factors. Firstly the extent to which school buses are used varies markedly (Fig. 11.13). It is easily the most common mode of transport for girls to their school in Sarat Abidah town. Over 90 percent of girls



Source: Author's fieldwork,1987

Figure 11.13 Means of transportation used by students to reach Secondary Education in the subregion, 1987

use it because they are not allowed to drive, few live close enough to walk, or their parents would not want them to walk to school. Being driven to school by their fathers or brothers is the only alternative. Therefore, the school bus is widely used.

In contrast the school bus is little used by boys at the teachers' institute in Sarat Abidah because most students are car owners, or have friends they can be driven to school by. But in four of the five boys' secondary schools the school bus provides an important service used by at least 40 percent of the pupils. Over 70 percent of the students at Alrofghah school use the bus. Fig. 11.13 shows that the great majority at this school live more than eleven km from the school. In this area roads are poor and levels of car ownership are probably lower. On the other hand a greater proportion of students drive themselves to school, or are driven to school, in the case of those attending Sarat Abidah, Sabat Bani Bishr, Jwof Almamer and Alharajah schools. It will be noted that most students at each of these schools live closer than fifteen km but too far from the schools to walk , so that the car is often the most convenient means by which students can get themselves to school.

But it seems that there are some relationships between means of transport and distance travelled to secondary and teacher training schools. Table 11.15 shows the mode of travel varies with distance travelled. As would be expected a large number of students travelling less than one km walk. At that distance 59 percent walked and 29 percent came by car. But, surprisingly, 12 percent came by school bus. As the distance to the secondary school increases, the school bus or own car or, to lesser extent, a friend's car become the main means of travel. Almost no one reported walking to

Table: 11.15

Mode of transport by distance travelled to secondary and teacher training schools in the Subregion, 1987, (percent).

Means of Transport	Distance Travelled (km)							
	<1	1-5	6-10	11-15	16-20	21-30	31-40	>40
Own car	29.4	37.4	39.1	39.3	61.1	38.5	83.3	85.7
School bus	11.8	42.4	48.1	53.0	27.8	38.5	-	-
On foot	58.8	11.1	1.3	-	-	-	-	-
Friend's car	-	9.1	11.5	7.7	11.1	17.9	16.7	14.3
Taxi	-	-	-	-	-	5.1	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author's Fieldwork, 1987.

the secondary school over distances greater than five km although one student each studying in Sabat Bani Bishr and Jwof Almamer secondary schools reported that they walk up to ten km. For distances of more than 30 km either the student's own car or a friend's car are the commmon means of transport because school buses are not allowed to travel over 25 km from the school.

The widespread practice of students reaching quite distant schools in this mountainous area by motor transport has only been possible because of the recent rapid expansion of the local road network linking tributary villages to their main local centres. Many of these roads are now asphalted. Without improved roads it would have been impossible in this environment a few years ago for students to reach schools ten or fifteen km away, even with motor transport. The rapid spread of car ownership and the speed at which the young males have adapted to driving has also greatly enlarged secondary school catchments.

The extent to which fast local transport by student cars or school buses has allowed schools to attract students from wide catchments is indicated not only by the considerable distances that some students travel to school but also by the type of roads they travel on. The questionnaire asked the secondary students to indicate whether they travelled on an asphalt or a dust road to school, or some combination of the two. The majority reported that they travelled on a combination of asphalt and dust, although this was commonly a shorter distance on the poorer road in order to reach the main highway or asphalted village road. Only 7 percent of pupils reported that their whole journey to school is on a dust road whereas 42 percent reported that their whole journey is on an asphalt road. Widespread availability of cars to student age drivers, and the provision of a metalled

road system, could therefore make the rapid extension of the secondary school catchments possible in spite of a dispersed settlement pattern which would seem to hinder such a spread.

This chapter has shown that the development of the school system in the subregion has occurred very recently. More than half of the boys' schools have been established since 1975, while 65 percent of girls' schools have opened since 1980. This recent and rapid expansion of schools has meant that many of them have to be housed in rented buildings, generally unsuitable for schooling purposes. The examination of the spatial pattern of development has shown that the development of schools has spread from the large villages in the mountain area, to the small cluster villages and small individual mountain villages, then diffusing recently into the Tihama and the nomad area in the northeast.

It is clear that the provision of boys' primary schools has now reached a mature stage of fairly general provision and has attracted most of primary age boys in the subregion. However, in the case of girls' primary schools, it is clear that although the number of schools has increased within the last few years, the provision is still inadequate in most areas of the subregion, particularly in the Tihama and the nomadic area in the northeast. Similarly, the provision of post-elementary levels for both sexes, especially for girls, is insufficient to provide a reasonable access and to attain uniform coverage.

It is therefore important that many more primary schools for girls are established, particularly in the Tihama and the northeast part of the mountain area in order to provide a full coverage of this level and to reduce the large gap in the provision between boys and girls. Many of the recently established primary schools for boys and girls will graduate

many children. If they are to continue their studies, there is a need for more intermediate schools for both sexes to be opened to provide a 100 percent transition from primary to intermediate schools. Because secondary schools require large catchment areas, large investment, more skilled staffs, and it is evident that secondary school students are more mobile than primary and intermediate school children, future provision of this level can be more centralized. However, a few additional secondary schools still have to be provided in well populated centres in the subregion. Moreover, it is important that the educational authorities should pay more attention to the quality of education and school accommodation which have been neglected during the rapid expansion of schools in the past years.

CHAPTER TWELVE

THE PROVISION OF HEALTH SERVICES IN THE SUBREGION

12.1 THE NATURE OF THE HEALTH PROBLEM

The provision of basic health services in the subregion has only occurred recently so that little information has yet been built up on the medical need of the population, the particular health problems of the mountain and desert environment of this part of Asir region, and the ways in which the 23 primary health centres now operating in the study area are used by the local population. This chapter is a first attempt to provide some analysis of the use made of these health centres on the basis of information provided by the central records of the Health Affairs Directorate for Asir in Abha and by the staff at each health clinic. The writer also undertook a sample survey of patient's use of the centres and this is reported towards the end of this chapter.

With over 400 villages with a total population of about 118,000 scattered across the Sarat Abidah subregion, it is, of course, a difficult area in which to deliver adequate medical services. Even with twenty three health clinics many villages remain several km from their nearest medical point. All 23 health centres remain fairly simple, each staffed by a general physician and also one to three nurses offering limited services. None of them have beds for overnight medical care. The area still has no hospital although one is due to open in 1988. Meanwhile patients needing more than basic medical help have to go up to 100 km to hospital.

As has been frequently mentioned the area is also geographically divided by the escarpment into the more densely populated mountain area and the nomadic peopled

Tihama with its lower living standards, much greater remoteness and much more oppressive terrain and climate. The distinction between the mountain and the Tihama remains one of the major features of the area, and is basic to the better provision of health services to the people. Further reference is made to the differences in the morbidity characteristics of the two areas and the use made of health services in the two areas at the end of the chapter.

Official records on common health problems in the area are sparse and have only been kept for a short period in most of the health centres in the study area. These records are also incomplete because they are only based on those families and groups in the population who have used the health centres for medical attention. Many families, especially amongst the nomads, still make little use of the basic health facilities that are becoming available.

Some idea of health conditions in the area can be gained from physician's diagnoses and treatments of patients seen in the 23 health centres in the study area in the last three months of 1986. Table 12.1 summarizes these treatments. It shows that problems of the ear, nose and throat, dental, chest and the gastro-intestinal tract were most common. They together accounted for 56 percent of all diagnoses. Rather less important were musculo-skeletal, genito-urinary, skin, wounds, eye diseases and gynecological problems. Rather surprisingly, communicable diseases were an uncommon problem but can become problems from time to time. Minor surgical treatment featured little in the records because most surgical work would be referred to a hospital outside the area.

Unfortunately the records give no information on the number of patients at local health centres sent on to hospital for more treatment. Similarly the level of gynecological work at

Table: 12.1

Diagnosis of diseases at health centres in the Subregion during the last three months of 1986.

Diagnosed Diseases	Male	%	Female	%	Child.	%	Total	%
Mouth and dental	6,918	14.0	4,753	14.0	4,611	12.1	16,282	13.4
Chest disease	6,199	12.5	2,861	8.4	7,032	18.5	16,092	13.2
Gastrointestinal	6,497	13.1	4,078	12.0	5,126	13.5	15,701	12.9
Genito-Urinary	3,264	6.6	2,319	6.8	900	2.4	6,483	5.3
Gynecology and Obst.	-	-	4,162	12.3	-	-	4,162	3.4
Skin Diseases	3,030	6.1	1,747	5.2	2.391	6.3	7,168	5.9
Musculo-Skeletal	6,282	12.7	5,077	15.0	634	1.7	11,993	9.9
Eye Diseases	1,901	3.8	933	2.8	1,831	4.8	4,665	3.8
E. N. T. Diseases	6.722	13.6	3,901	11.5	9,198	24.2	19,821	16.3
Wound, Fracture & Burn	3,191	6.4	873	2.6	2,004	5.3	6,068	5.0
Others	5,572	11.2	3,204	9.4	4,257	11.2	13,033	10.9
TOTAL	49,576	100.0	33,908	100.0	37,984	100.0	121,468	100.0

Source: The subregion's health centres, Monthly Outpatients Statistical Reports, Oct., Nov., Dec., 1986.

the local health centres is small because they only offer basic midwifery services. Most childbirth takes place in the mother's home often without a doctor or nurse present. Only 510 deliveries were recorded at the local health centres in 1986 out of approximately 4,407 births in the study area. Only 82 home deliveries were attended by a midwife from a health centre, most childbirth being assisted by an older relative, other mothers or neighbours. On the other hand about 5,200 visits were made to clinics by pregnant women during 1986 suggesting that prenatal health care is becoming more common. This figure is similar to the number of births in the year so this probably means that only a proportion of pregnant women attend prenatal clinincs and they attended on more than one occasion. Of those visits 55 percent were to the one centre at Sarat Abidah town which has a female doctor and proper facilities for childbirth. 58 percent of all the births that occurred within health centres in 1986 were in this one centre, so that prenatal care probably varies across the area and is much better in Sarat Abidah town.

The Table also suggests considerable variations in morbidity patterns between the adult male, female and child (under twelve years old) populations who visited the health centres. Adult males tend to use the health centres more than the other groups and their common health problems tend to match those of the total set of patients. That is, they tend to suffer gastro-intestinal, chest, ear, nose and throat and dental problems. Musculo-skeletal problems, wounds, eye diseases, genito-urinary problems and skin diseases are also common. Women also most frequently come for treatment for muscular, dental, ear, nose and throat and gastro-intestinal problems as well as for gynecology and obstetrics. But they come rather less frequently than men

for chest diseases, skin and eye problems or injuries, possibly because they are less susceptible to some of these, or because they do not bother to seek medical help for them. Children, as might be expected, come for attention to ear, nose and throat problems, chest and gastro-intestinal problems, as well as dental and skin problems.

These global figures on diagnosis and treatment do not, however, give any indication of variations in health condition across the subregion and little can said on this because there is a gross lack of data. One would expect health condition to be much poorer amongst the Tihama people even if they make less use of health centres. It is known, for example, that communicable diseases, as well as chest and genito-urinary problems, are much more common in the Tihama than in the mountains. Malaria is widespread amongst the population in the Tihama area. Al-Qahtani (1985) has reported that malaria is found amongst more than half the school children in the Alfarashah area and as a result the Department of Preventive Medicine for the Asir region has established a malaria prevention station at Alfarashah to try to control the spread of the disease. During 1986 5,530 persons were treated for malaria and 127 settlements were visited in a malarial survey. Their inhabitants received some treatment such as vaccinations, blood tests and anti-mosquito house spraying. But the widespread nature of the disease and the isolation of much of the population will make its total eradication in the near future difficult. Al-Qahtani (1985) has also shown that in the Tihama not only is malaria prevalent but also bilharsia. A later part of the chapter attempts to measure levels of use of health services in the two main zones of the subregion.

12.2 THE DEVELOPMENT OF HEALTH CENTRE PATTERN

The material assembled and analysed here has been gathered by the author from a variety of sources including the area's primary health care centres, Asir Health Affairs Directorate and from the Ministry of Health in Riyadh. Visits were made and interviews conducted with the staffs at all 23 primary health care centres in the subregion. Because no official data was available on the movements of patients to the health centres a questionnaire was devised and applied to a sample of about 50 users in each of the 23 primary health care centres. This provided information on 1137 health centres users and on their travel patterns to health care centres.

Government policy is to provide health care free to all the population and the government has spent generously to make health facilities obtainable by all people whether they live in urban or rural areas. But the lack of trained manpower and the dispersed settlement pattern in the rural areas has confined most health provision to the main urban areas, leaving rural areas like the subregion relatively badly served. As well as this, health problems can be exacerbated by the rural environment in the form of poor housing conditions, contaminated drinking water, a general lack of hygiene and malnutrition.

Being a rural area health services developed very slowly in the subregion. But with the initiation of the Third Development Plan in 1980, the area has seen a rapid improvement in the last few years in both the quantity and the quality of preventive and curative aspects of the health services. The late development of these services reflect many of the problems of providing health care to a dispersed rural population.

The first health point was not set up in the area until 1953 when one opened in Sarat Abidah town, then a small village. This health point was staffed by only one male nurse and afforded very limited health care to the people. Before then any medical help in the area, as in most of the Kingdom, was rudimentary and limited to various traditional healers of which there were several in the area, such as the Almodawa (religious scholar), Alhajam (barber surgeon) and Almodawi (herbalist). Common sickness was usually treated at home by the family as best it could.

As already mentioned in chapter seven primary health care centres are nationally divided into four classes. The smallest, grade one, centres serve communities with 1,000 to 5,000 inhabitants, while grade two serve communities of 5,000 to 10,000, and grade three centre serve communities of 10,000 to 20,000. Grade four centres provide for a whole district. Of the 23 primary health care centres in the study area, thirteen are grade one, four are grade two, and five are grade three. Only one health centre in the area is grade four and that is located in Sarat Abidah town. The locations of the 23 centres divided by grade are shown in Fig. 12.1. The various health centres of different grades are in line with what one would expect to cater for a population of about 118,000. No private medical service exists in the study area to supplement these basic services. Nor is the local hospital in Sarat Abidah town yet open.*

Fig. 12.2 shows the distribution of the 23 primary

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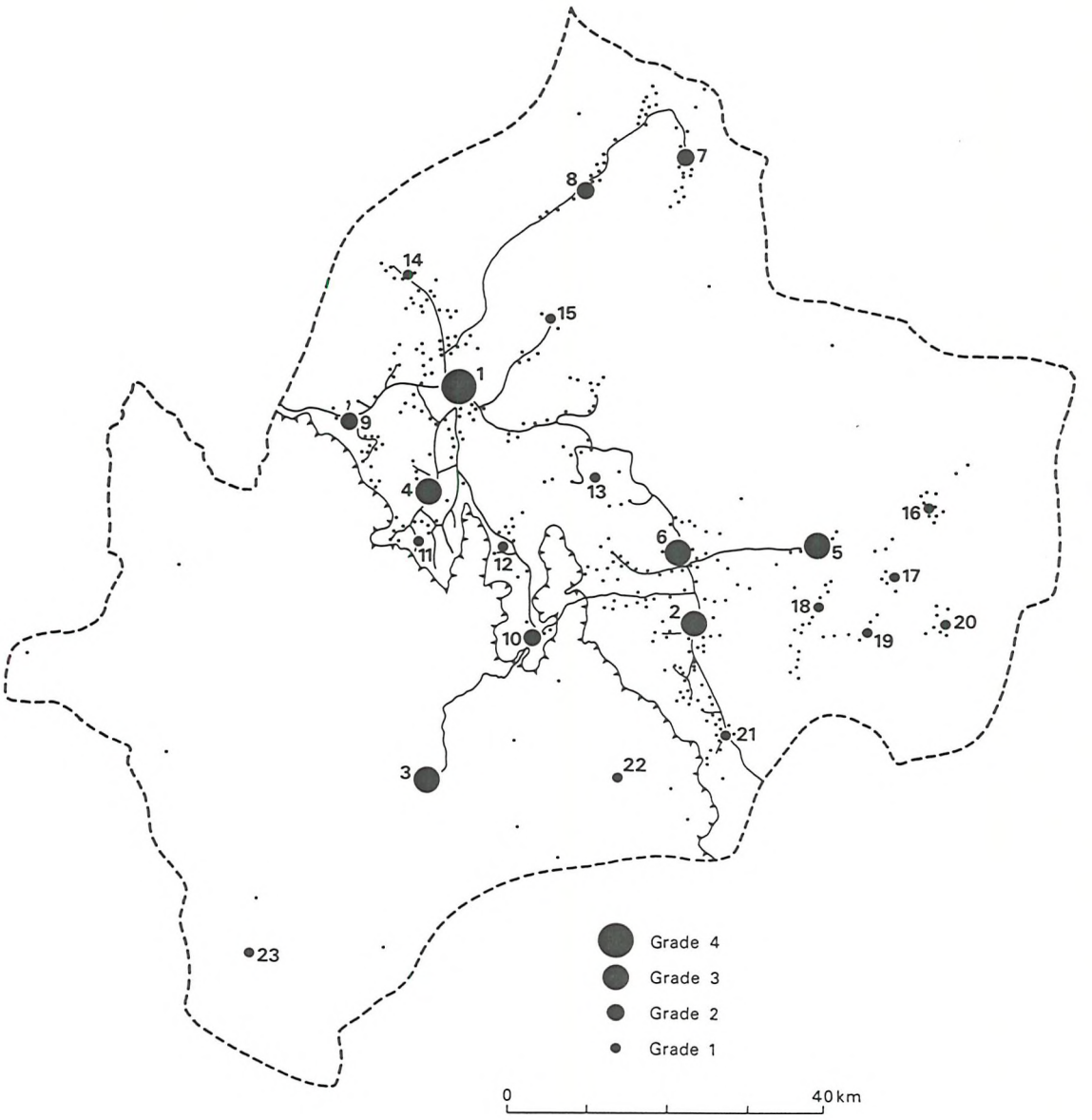
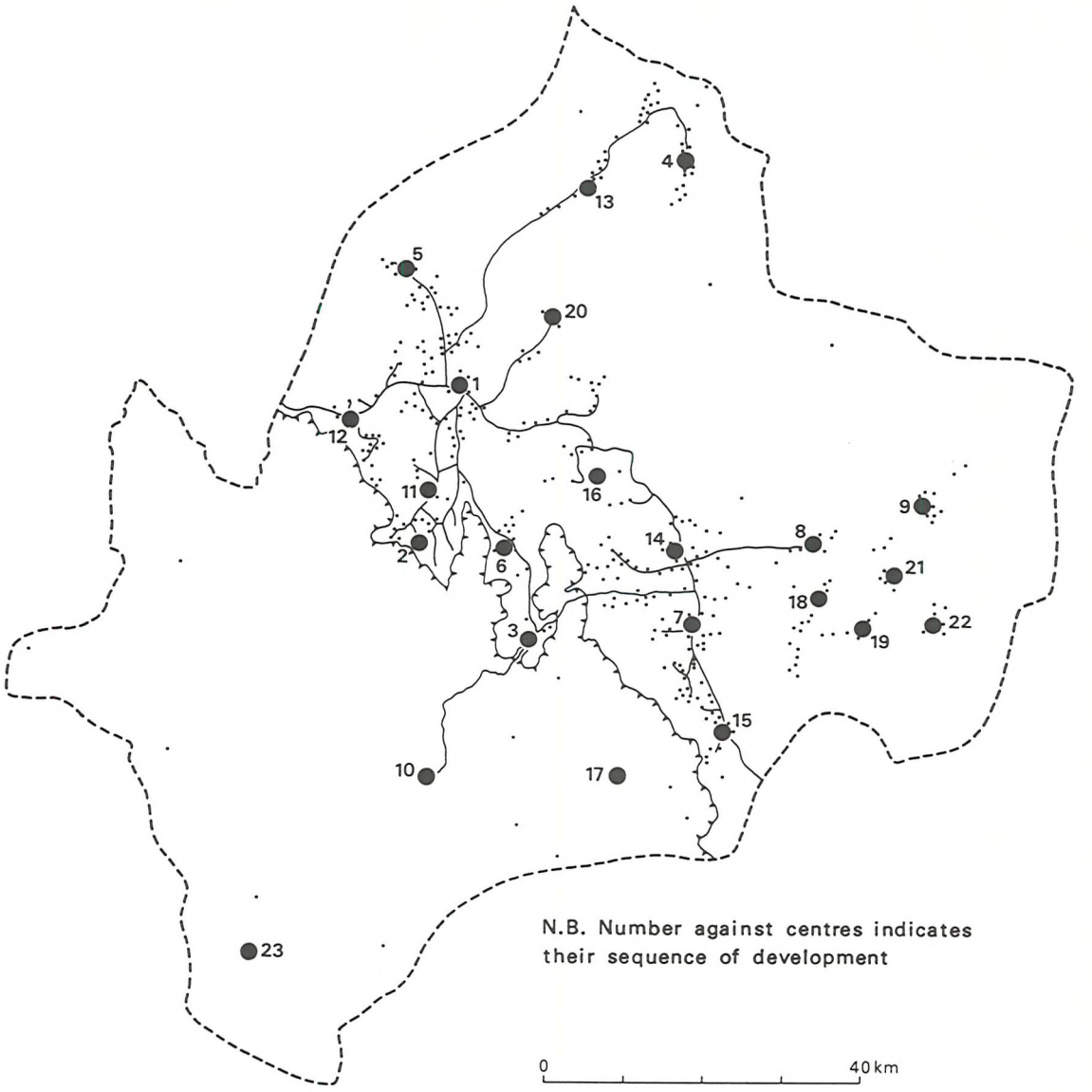
* Built to provide 100 beds and finished in late 1986 at a cost of SR 162,492,530, the hospital in Sarat Abidah town is not expected to function until late 1988 because of lack of manpower and funds for running costs. It was orginally planned to be in use in 1985 but the fall in government oil revenue in recent years slowed many developments like this and priority was given to finishing health projects in the major cities before the rural areas.



HEALTH CENTRE	GRADE	HEALTH CENTRE	GRADE	HEALTH CENTRE	GRADE
1 Sarat Abidah	4	9 Alasran	2	17 Alrofghah	1
2 Alharajah	3	10 Aljawwah	2	18 Sarwom	1
3 Alfarashah	3	11 Alkhalf	1	19 Wadi Janab	1
4 Sabat Bani Bishr	3	12 Alardayn	1	20 Majma Alhayan	1
5 Alfayed	3	13 Alfarahah	1	21 Rahat Sanhan	1
6 Wadi Yawad	3	14 Alwahabah	1	22 Almoftah	1
7 Alarquayn	2	15 Khadar	1	23 Wadi Alhayah	1
8 Jwof Almamer	2	16 Alqasab	1		

Source: Author's Fieldwork, 1987

Figure 12.1 The distribution of Health Centres by their Grade in the subregion, 1987



HEALTH CENTRE	YEAR OF CREATION	HEALTH CENTRE	YEAR OF CREATION	HEALTH CENTRE	YEAR OF CREATION
1 Sarat Abidah	1953	9 Alqasab	1977	17 Almoftah	1983
2 Alkhalf	1958	10 Alfarashah	1977	18 Sarwom	1983
3 Aljawwah	1958	11 Sabat Bani Bishr	1978	19 Wadi Janab	1983
4 Alarquayn	1965	12 Alasran	1978	20 Khadar	1984
5 Alwahabah	1966	13 Jwof Almamer	1980	21 Alrofghah	1985
6 Alardayn	1969	14 Wadi Yawad	1980	22 Majma Alhayan	1986
7 Alharajah	1973	15 Rahat Sanhan	1981	23 Wadi Alhayah	1986
8 Alfayed	1975	16 Alfarahah	1982		

Source: Author's Fieldwork, 1987

Figure 12.2 The distribution of Primary Health Care Centres in the subregion by year of establishment, 1987

health care centres in the study area by year of establishment. When they were first established each was simply a low grade health points. Only later were some expanded and upgraded. Five years after the first health point in the area was opened at Sarat Abidah in 1953 two more points were established in Alkhalf and Aljawwah also in the well populated mountain zone. In the 1960s three more health points were started in the mountain villages of Alarquayn (1965), Alwahabah (1966) and Alardayn (1969) so that by the beginning of the 1970s there were six health points in the subregion, most of them fairly close to Sarat Abidah town.

It was not until the 1970s that a faster growth of health points occurred and they were introduced into some of the remoter parts of the subregion. The southeastern mountain area obtained its first health point in 1973 at the village of Alharajah to serve a large numbers of villages around it. In the late 1970s five new health posts were set up, four of them in mountain villages with quite large catchment areas which already had other services like boys' and girls' schools. The villages selected for these health points were Alfayed (1975), Alqasab (1977), Alasran (1978), and Sabat Bani Bishr (1978). At this time the first medical services were introduced into the Tihama area when a health point was set up at Alfarashah, 24 years after the first health point was launched in the mountain part of the subregion. This very recent development of a health facility in the Tihama area reflects its isolation from the rest of the subregion as a result of the massive barrier of the escarpment between the mountains and the Tihama. The first very rough dust road was not opened between the mountain area and the Tihama until 1976 making it possible to provide such services.

While the number of health points in the subregion had risen to twelve by the end of the 1970s the level of health care they provided was still very limited because they were inadequately staffed and many rural communities were still too remote from them. Most of them were only staffed by a male nurse with one or two assistants and were unable to provide more than basic medical care in the form of first aid, injections and other minor treatment. Some medicines were also dispensed.

The nation's Third development plan (1980-1985) brought about dramatic modifications to the primary health services in the country. Not only did the Ministry of Health change the name of its basic health points to primary health care centres, but it introduced measures to enhance their preventive and curative services by providing them with more resources. It was also under this plan that the primary health care centres were for the first time graded according to the number of inhabitants they served.

With more resources being channelled into health care, eleven more primary health centres have been set up in the subregion during the 1980s. No less than four of them were set up in the Alfayed Subemirate in the southeastern mountain area. This part had previously been poorly served. The villages of Sarwom and Wadi Janab got health centres in 1983, followed by Alrofghah in 1985 and Majma Alhayan in 1986. Meanwhile three more health centres were opened in the Sarat Abidah area and two more were set up in the Alharajah area, at Wadi Yawad in 1980 and Rahat Sanhan in 1981. Also two centres were established in the Tihama at Almoftah and Wadi Alhayah in 1983 and 1986 respectively.

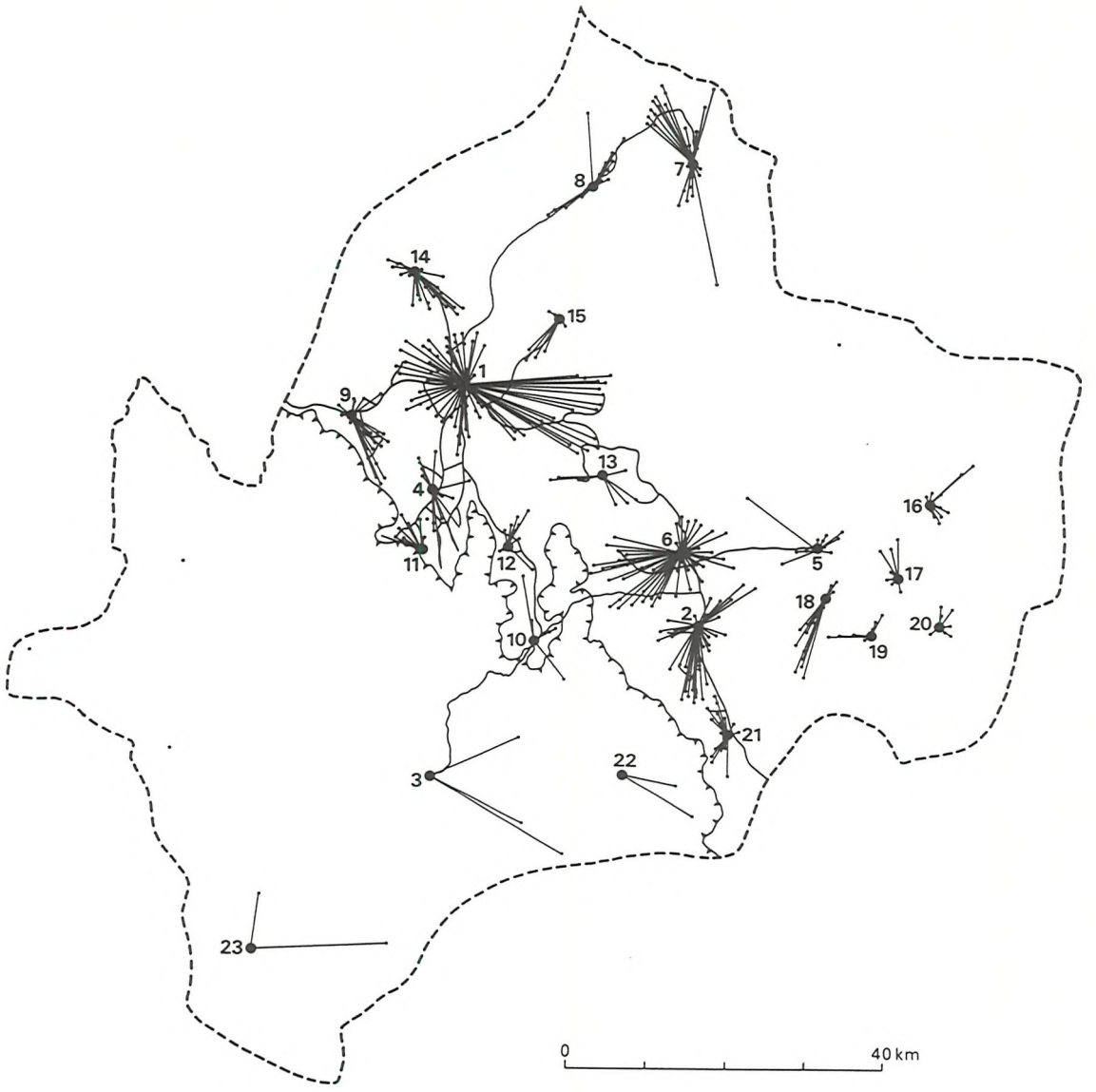
Clearly, the expansion of primary health services in the subregion occurred most rapidly from the late 1970s. Since then the number of centres has more than doubled, and the

services and staff provided at many of them were upgraded to bring better facililties closer to a greater proportion of the subregion's population. Even so with over 400 villages to serve, the problem of matching resources to needs for primary health care are daunting and much remains to be done to get an effective health coverage of the population.

12.3 HEALTH CENTRE CATCHMENT AREAS

The designated catchment areas of the subregion's 23 primary health care centres are shown in Fig. 12.3. These are based on information provided by the staff of each health centre in the area. The health centre staffs identified a total of 403 villages within their catchments with a population of about 76,000 in 1983 out of a total subregion population then of about 100,200. The shortfall of 24,200 people not in designated catchments is made up of nearly all of the 23,000 nomads in the subregion and 1,200 in four villages still not within defined catchments of existing health centres. Two of these villages are in the Tihama and in the northern nomadic area. It is estimated that 15,000 of the nomads not included in health centre catchment live in the Tihama and another 8,000 in the dry northern mountain flanks in the areas north of Alfayed and around Alarquayn in the far north of the subregion. Even though they are not included in health centre catchments some do travel to centres to get medical help.

The catchment areas of the different health centres vary greatly in size and in the number of villages served as Fig. 12.3 shows. By far the largest is the Sarat Abidah health centre, the only grade four centre in the subregion. It serves 75 villages with a total population of more than 17,000. This is followed by Wadi Yawad centre serving 47



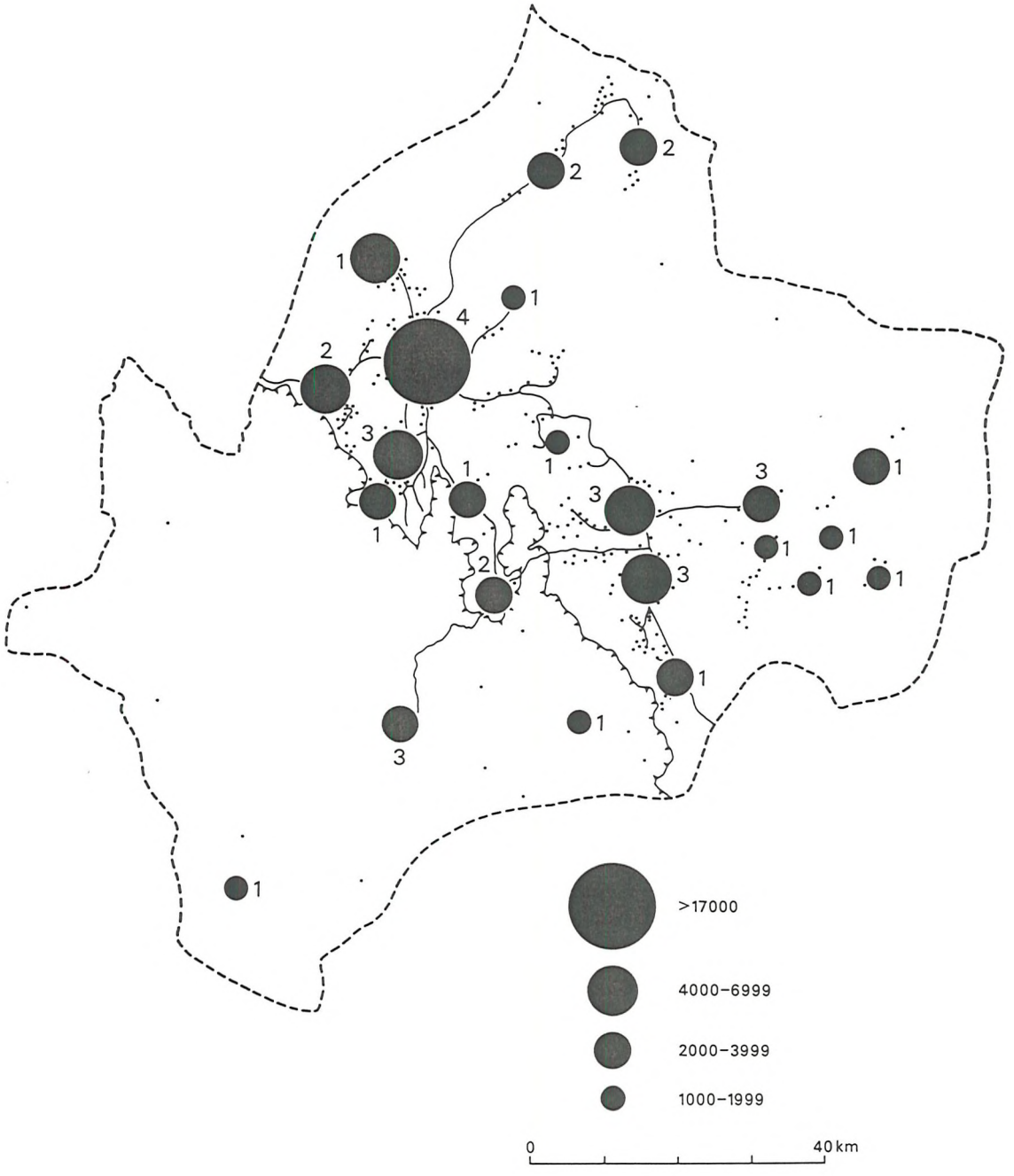
HEALTH CENTRE	GRADE	VILLAGE NUMBER	HEALTH CENTRE	GRADE	VILLAGE NUMBER	HEALTH CENTRE	GRADE	VILLAGE NUMBER
1 Sarat Abidah	4	75	9 Alasran	2	22	17 Alrofghah	1	8
2 Alharajah	3	43	10 Aljawwah	2	6	18 Sarwom	1	16
3 Alfarashah	3	4	11 Alkhalf	1	8	19 Wadi Janab	1	8
4 Sabat Bani Bishr	3	16	12 Alardayn	1	10	20 Majma Alhayan	1	8
5 Alfayed	3	13	13 Alfarahah	1	8	21 Rahat Sanhan	1	18
6 Wadi Yawad	3	47	14 Alwahabah	1	21	22 Almoftah	1	3
7 Alarquayn	2	31	15 Khadar	1	8	23 Wadi Alhayah	1	3
8 Jwof Almamer	2	14	16 Alqasab	1	12			

Source: Author's fieldwork, 1987

Figure 12.3 The designated catchment areas for the subregion's Primary Health Care Centres, 1987

villages with a total population of more than 6,000 and Alharajah centre with 43 villages and 5,300 people. But several primary health care centres in the mountain area serve quite small catchment areas of between eight and 22 villages and a total population of less than 2,000 persons. This is particularly the case in the eastern mountains where average village size is small and communities are quite dispersed. The catchment populations of health centres in the Tihama are also small because settlements are very scattered making it difficult to serve a large proportion of the nomadic people that live around them. The local staff of the Tihama health centres estimated that in total they served only about 20 percent of the Tihama population, mainly the village population, leaving 80 percent of its inhabitants, particularly the true nomads, without this vital facility. With all three health centres in the southeastern part of the Tihama, the villages and nomads in the northwestern Tihama clearly lack medical services.

The population numbers reportedly served by each health centre are shown in Fig. 12.4, and range from about 1,000 to more than 17,000 people. Eight centres - all grade one centres - serve catchment areas with less than 2,000 inhabitants. Six of these are in the mountains. Nine health centres serve catchment populations of between 2,000 and 4,000 people. The health centres of Alasran, Alwahabah and Sabat Bani Bishr in Sarat Abidah subemirate and Wadi Yawad and Alharajah in Alharajah subemirate serve catchment areas of 4,000 to 7,000 people. Most of these are grade two or three centres and were amongst the earliest establishments because of their large local catchments. Only the health centre of Sarat Abidah town serves a much greater population, partly because Sarat Abidah town has a larger population but also because it is central to a large number



Source: Author's Fieldwork, 1987

Figure 12.4 The catchment population of Primary Health Care Centres by Grade in the subregion, 1987

of villages.

Data has been compiled on the distances of health centres from the villages in their designated catchments. This data has been analysed to classify the settlements into six groups according to their distance from the nearest health centre. Table 12.2 shows that of the 403 villages, 32.5 percent (131 Villages) lie within five km of their health centres and another 37.2 percent were within six to ten km. In other words, the majority of the villages (70 percent) were relatively close, within ten km, to a health centre. But a significant number of villages are quite remote from their centre. 73 villages (18 percent) lie between eleven to fifteen km, and 49 villages (12 percent) lie at more than sixteen km, some being over 30 km away. Although their number is small these remote villages do represent a major problem in health care provision in such a dispersed village pattern, as do the nomads who live outside of the designated catchments.

Table: 12.2
The distribution of villages by distance from health centres in the Subregion, 1987.

Distances (KM)	No. of Villages	Percent	Cumulative Percent
< 5	131	32.5	32.5
6 - 10	150	37.2	69.7
11 - 15	73	18.1	87.8
16 - 20	24	6.0	93.8
21 - 30	18	4.5	98.3
> 30	7	1.7	100.0
TOTAL	403	100.0	100.0

Source: Author's Fieldwork, 1987

There are, nevertheless, variations between different parts of the study area in terms of the distances of villages from their health centres. Fig. 12.5 graphs the

percentage of villages at different distances from their health centres in the six subemirates in the study area. It is apparent that the Alfayed villages show a significantly higher degree of village clustering close to their health centres than the other groups, with over half of the 65 villages no more than five km from their health centres, and with no villages more than fifteen km away. In contrast, the villages of Alfarashah subemirate in the Tihama and Aljawwah subemirate partly in the Tihama area, show a much lower degree of village clustering around their health centres. Six of the ten villages in the Alfarashah area lie more than 30 km from their health centres because only three health centres serve the very large Tihama area. The six villages served by Aljawwah primary health care centre are rather closer to it, partly because the clinic is located at Aljawwah on the edge of the escarpment and therefore has a number of the nearby mountain villages tributary to it. But its catchment area also includes one distant Tihama village over 30 km away.

The catchment areas of the health centres in the main mountain zone subemirates of Sarat Abidah and Alharajah show a large proportion of their villages relatively close to their health centres as one would expect, but because those centres serve large numbers of villages it is inevitable that some villages are more remote from their health centres. In Sarat Abidah subemirate for example, 75 percent of the 183 villages served by the nine clinics are within ten km of their centres, but there are 21 villages beyond sixteen km. In the case of Alharajah subemirate more than half of the 108 villages are within ten km of one of their three health centres. But another 40 percent of this area's villages are more than ten km from a health centre. This is partly because with only three primary health care centres

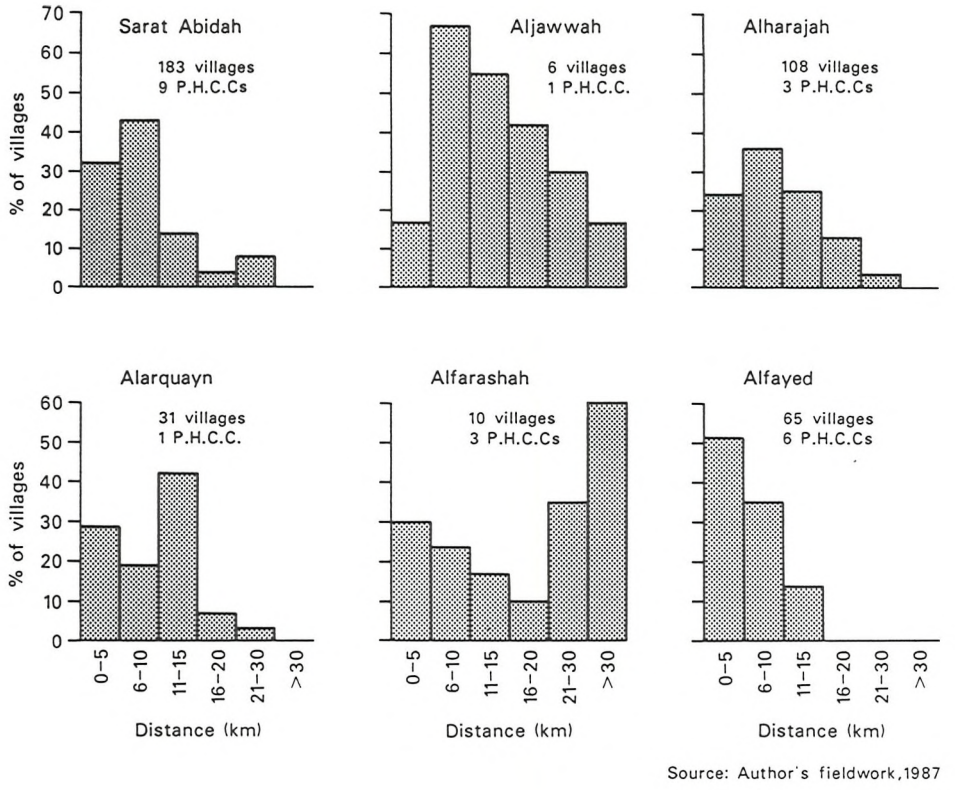


Figure 12.5 The percentage of villages at different distances from their Health Centres in the six subemirates in the subregion, 1987

to serve 108 villages each centre, on average, serves 36 villages compared with a mean of only 20 villages in Sarat Abidah subemirate.

In the other parts of the mountain zone, where more health centres are available to serve the villages, the number of villages far from a health centre declines. In Alfayed area, where the highest proportion of villages are close to their health centres, the average number of villages tributary to a clinic is only about eleven compared with a ratio of one centre to 20 villages in Sarat Abidah subemirate. The Alarquayn area in the northern part of the subregion presents another pattern with only one health centre serving 31 villages. 28 of these villages are found within fifteen km of the centre. Only three villages lie at more than fifteen km but there is also a large number of nomads in this area who travel in over long distances for treatment at this health centre. In a case like this, as in the Tihama, the designated catchment of villages tributary to a health centre gives a misleading impression because the nomads live outside the designated catchment.

12.4 HEALTH SERVICE RESOURCES

The number of population and location of villages dependent on a health centre is one means of judging the pattern of health care facilities. The availablitiy of staff and other resources at the primary health care centres is another means by which to judge their performance. These resources include various types of skilled staff, physical facilities, equipment and supplies, as well as cash to operate the system. All of these resources are provided by the Primary Health Care Department of the Health Affairs Directorate of the Asir Region. Manpower shortages are often

more acute than cash shortages, so that limitation of this resource provides a better indication of the health care provision than the level of equipment. In general Saudi Arabia has the capital to establish physical health care facilities in the form of hospitals and clinics but getting qualified staff is more difficult. This is especially so in rural area like the Sarat Abidah subregion because few doctors are willing to live and work in such area with their lower standard of living compared with urban areas. Therefore, most of the rural area's physicians are less experienced doctors than one finds in the towns, and several are still in training.

What is, more the population/doctor ratio for the study area is high by national standard. In 1987 in the subregion there was one physician per 3,690 inhabitants which is much higher than the 1986 national ratio of one doctor per 615 people. It is also a worse ratio than for Asir region which had one doctor per 1,511 people in 1986. The same situation is found with other medical staff. The nurse/population ratio was one per 1,421 people in the Sarat Abidah subregion in 1987 compared with 1: 580 for Asir and 1: 283 for the whole country in 1986.

Against the background of this low staff provision the present pattern of staffing in the study area's health centres is shown in Table 12.3. Broadly speaking, the number of staff is very limited for the number of centres to be manned. There are only 32 general practitioners spread between the 23 health centres to give an average of 1.4 doctors per centre. Only two of these doctors are female physicians. It could be argued on the basis of other studies that for adequate primary health care, there should be at least 133 physicians to serve about 100,000 people (Shannon and Dever, 1974) compared with the 32 actually in post. Only

Table: 12.3

The manpower of health centres in the Subregion, 1987.

Code in Fig. 12.1	Primary health care centre	Phys.	Dent.	Phar. ass.	Tech. ass.	Heal. insp.	Nur.	Adm.	Serv.	Driv.	Total
1	Sarat Abidah	6	2	3	6	2	16	5	14	2	56
2	Alharajah	3	1	1	2	1	5	1	4	1	19
3	Alfarashah	2	1	1	2	1	4	-	3	1	15
4	Sabat B. B.	2	1	1	2	1	5	2	5	1	20
5	Alfayed	1	1	1	1	-	4	-	4	1	13
6	Wadi Yawad	1	-	1	2	-	5	1	5	1	16
7	Alarquayn	1	-	1	-	-	5	-	3	1	11
8	Jwof Almamer	1	-	1	1	-	3	1	3	1	11
9	Alasran	1	-	1	2	-	3	1	4	1	13
10	Aljawwah	1	-	1	2	1	2	1	3	1	12
11	Alkhalf	1	-	-	1	-	2	1	4	1	10
12	Alardayn	1	-	1	1	1	2	1	5	-	12
13	Alfarahah	1	-	-	-	-	4	-	2	1	8
14	Alwahabah	1	-	1	1	-	3	-	2	-	8
15	Khadar	1	-	-	-	-	2	-	3	1	7
16	Alqasab	1	-	1	-	-	1	-	3	1	7
17	Alrofghah	1	-	-	1	-	3	-	2	1	8
18	Sarwom	1	-	-	-	-	3	1	2	-	7
19	Wadi Janab	1	-	1	2	-	2	1	5	1	13
20	Majma Alhayan	1	-	-	-	-	1	-	4	-	6
21	Rahat Sanhan	1	-	1	1	-	2	1	2	1	9
22	Almoftah	1	-	-	-	-	1	1	1	1	5
23	Wadi Alhayah	1	-	1	2	-	5	1	5	1	16
-	TOTAL	32	6	18	29	7	83	19	88	20	302

Abbreviations: Phys.: Physicians, Dent.: Dentists, Phar. ass.: Pharmacy assistants, Tech. ass.: Technician assistants, Heal. insp.: Health inspectors, Nur.: Nurses, Adm.: Administrative staff, Serv.: Servants, Driv.: Drivers.

Source: Author's Fieldwork, 1987.

four of the 23 centres have more than one resident physician. The health centre in Sarat Abidah town, easily the largest clinic, has six, or about 19 percent of the physicians in the whole area. Alharajah centre has three, while Sabat Bani Bishr and Alfarashah centres have two physicians each. There are only six dentists to serve more than 100,000 people in the study area, or one dentist per 19,611 inhabitants, two of them in Sarat Abidah centre and one each in the health centres of Sabat Bani Bishr, Alfarashah, Alharajah and Alfayed.

Ancillary medical staff like nurses, pharmacy assistants, technician assistants, health inspectors, administrators, servants and drivers are also important in the functioning of the health service, but Table 12.3 shows their uneven distribution across the area. All centres had at least one nurse and often two or more. Seven of the primary health care centres have no pharmacist or technician so that the resident physician has to do almost all the basic technical work. There are even fewer health inspectors and administrators to carry out the paper work and to keep records and statistics which is an important task for any centre. On the other hand field survey also revealed that there seems to be no shortage of some other ancillary staff. There was a 12 percent surplus of technician assistants and a 28 percent oversupply of support personnel, the servants and drivers, based on normal staffing levels. They represent about a third of the total primary health care centre staffs in the area. Servants have no designated duties but generally act as caretakers.

An additional staff problem is that most of the key medical staff in the study area are foreign, often lacking a full knowledge of the Arabic language and of the manners and customs of the population. Thus, there are often problems of

communication with the people and with government agencies. In fact none of the physicians, nurses or technical assistants in the subregion are Saudi and only two of the pharmacy assistants are of Saudi nationality.

Despite the limited professional staff in the subregion's health centres there is an apparent surplus in some categories of staff in some centres to judge from the work they perform and the grade of the centre. For example the staff at the Wadi Yawad and Alfayed centres stated that they have a surplus of nurses and technicians while they are in need of X-ray technicians to operate the X-ray machine they already have. One reason for this lack of balance between staff availability and needs is that there are no manuals laying down specific staff duties. Physicians at each centre are responsible for their staffs but are not trained as managers.

One effect of this maldistribution of staff is the variation in the level of provision of physicians in different parts of the subregion. This must affect the level of health care provided. In the mountain area, there is a relatively better physician/population ratio of 1:3,256. Here about 86 percent of the total primary health care staff in the whole subregion are found for about 77 percent of the population. In contrast the Tihama area has one physician for every 6,626 persons and only 14 percent of the area's medical manpower, to serve 23 percent of the total population of the subregion. This contrast between health provision in the mountains and the Tihama is apparent at all levels of staffing and is referred to again elsewhere.

Another problem making this imbalanced provision of resources across the subregion worse is that most centres are not staffed up to the norms laid down for them. Overall the 23 health centres only have about 74 percent of the

staff they should have. Table 12.4 shows the staffing norms for each grade of primary health care centre as laid down by the Ministry of Health. The staffing sanctioned for a grade four centre is 69 with no less than ten physicians, more than twice the staff of a grade three centre. Similarly a grade two centre should have twice the staff of a grade one centre, including two physicians and a dentist compared with just one doctor in a grade one centre.

Table: 12.4
The staffing norms for health centres by grade.

Health centre manpower	Grade one	Grade two	Grade three	Grade four
Physician	1	2	3	10
Dentist	-	1	1	1
Pharmacy Assist.	1	1	1	4
Technician Assist.	-	1	3	6
Social Specialist	-	1	1	2
Health Inspector	1	1	2	4
Nurse	2	3	7	19
Adminstrator	1	4	6	8
Servant	2	3	4	10
Driver	1	1	2	5
Total	9	18	30	69

Source: Ministry of Health, Planning Dept., 1986.

Table 12.5 shows the extent to which the actual staffing levels in each of the 23 centres in the subregion fall below the norms for those grades of centres. Overall whereas there should be 408 medical staff in the 23 health centres there is only 302, a 26 percent shortfall. This is made up of a 30 percent shortage of physicians, 40 percent of dentists, and 31 percent of pharmacy assistants. Even though the area's centres are relatively well supplied with nurses there is a 13 percent shortage. At some of the ancilliary levels the shortfalls are even greater - 74 percent of administrators, 77 percent of health inspectors, 44 percent of drivers.

Table: 12.5

The difference between the actual staffing levels and the staffing norms in the subregion's health centres, 1987.

Code in Fig. 12.1	Primary health care centre	Phys.	Dent.	Phar. ass.	Tech. ass.	Nur.	Soc. sp.	Heal. insp.	Adm.	Serv.	Driv.
1	Sarat Abidah	-4	1	-1	0	-3	-2	-2	-3	+4	-3
2	Alharajah	0	0	0	-1	-2	-1	-1	-5	0	-1
3	Alfarashah	-1	0	0	-1	-3	-1	-1	-6	-1	-1
4	Sabat B. B.	-1	0	0	-1	-2	-1	-1	-4	+1	-1
5	Alfayed	-2	0	0	-2	-3	-1	-2	-6	0	-1
6	Wadi Yawad	-2	-1	0	-1	-2	-1	-2	-5	+1	-1
7	Alarquayn	-1	-1	0	-1	-2	-1	-1	-4	0	0
8	Jwof Almamer	-1	-1	0	0	0	-1	-1	-3	0	0
9	Alasran	-1	-1	0	+1	0	-1	-1	-3	+1	0
10	Aljawwah	-1	-1	1	+1	-1	-1	0	-3	0	0
11	Alkhalf	0	x	-1	+1	0	x	-1	0	+2	0
12	Alardayn	0	x	0	+1	0	x	0	0	+3	-1
13	Alfarahah	0	x	-1	x	-2	x	-1	-1	0	0
14	Alwahabah	0	x	0	+1	+1	x	-1	-1	0	0
15	Khadar	0	x	-1	x	0	x	-1	-1	+1	-1
16	Alqasab	0	x	0	x	-1	x	-1	-1	+1	0
17	Alrofghah	0	x	-1	+1	+1	x	-1	-1	0	0
18	Sarwom	0	x	-1	x	+1	x	-1	0	0	-1
19	Wadi Janab	0	x	0	+2	0	x	-1	0	+3	0
20	Majma Alhayan	0	x	-1	x	-1	x	-1	-1	+2	-1
21	Rahat Sanhan	0	x	0	+1	0	x	-1	0	0	0
22	Almoftah	0	x	-1	x	-1	x	-1	-1	-1	0
23	Wadi Alhayah	0	x	0	+2	0	x	-1	0	+ 2	0

A minus figure indicates number of staff below norm.
A plus figure indicates number of staff above the norm.
0 indicates staff number is at norm.
x indicates this type of staff is not found in that centre.

Abbreviations: Phys.: Physicians, Dent.: Dentists, Phar. ass.: Pharmacy assistants, Tech. ass.: Technician assistants, Heal. insp.: Health inspectors, Nur.: Nurses, Soc. sp.: Social specilaists, Adm.: Administrative staff, Serv.: Servants, Driv.: Drivers.

Source: Author's Fieldwork, 1987.

There are no social medical specialists whereas there should be at least 13 in the subregion.

These staff shortages are unevely spread between the different primary health care centres. Generally the shortages are largest in the higher grade centres, by 19 percent at Sarat Abidah town centwe (grade 4) and 33 percent and 57 wercent in Sabat Bani Bishr (grade 3) and Alfayed (grade 3). On the other hand, the lower grade centres are generally up to or above their staffing norms. For example, the centres at Wadi Janab and Wadi Alhayah (both grade one centres) have staff surpluses of more than 20 percent. To some extent this is to be expected since in the small centres it is more difficult to operate at all without a basic provision of staff, whereas duplication of staff in the larger centres does allow for a shortage to be covered by other staff members.

12.5 HEALTH CENTRE EQUIPMENT AND SUPPLIES

A similar but less detailed analysis of equipment and actual provision could be made for the health centres. The level of provision of equipment and supplies in the study area's primary health care centres varies partly according to the grades of the centres but partly also according to perceived local needs by the Health Ministry. It is clear that the relationship between grade of centre and its level of equipment is a loose one.

No records exist of the quantities of different medicines and consumables used in each centre as a measure of the types of health care provided. Medicines usually sufficient for primary services, such as anti-diarrheal, anti-diabetic, skin ointment, eye ointment, analgesics, anti-spasmodical and antibiotic supplies, are provided from

Abha in response to orders by the physicians or the pharmacy assistants at the health centres. All of the centres are supplied and equipped from the Health Affairs Directorate for the Asir region in Abha city. The rate of use of consumables at each health centre such as paper, disposable syringes and cotton wool is not accounted for and can be replaced as required so that no analysis of the centres can be based on this.

A full account is only kept of non disposable equipment and its use and these records do allow some analysis of health centres. This includes laboratory equipment, X-rays, dental, minor surgical and examination instruments and office equipment and furniture. Table 12.6 shows the facilities available at each health centre. The only top grade centre in the area, in Sarat Abidah town, has all the listed facilities, as do Sabat Bani Bishr and Alharajah although these are only grade three centres. But the grade three centres at Alfarashah and Alfayed lack X-ray facilities while the grade three centre at Wadi Yawad is equipped no better than a grade two centre. All four of the grade two centres have midwife, ambulance and vaccination facilities but one of them, Jwof Almamer, has laboratory facilities. In total only five health centres have dental equipment, three centres have X-ray machines and six have laboratory equipment for routine sample testing. All centres offer vaccination facilities and most have very basic midwife and ambulance services.

12.6 HEALTH RESOURCE WEAKNESSES

It is often the level of provision of these more basic services which gives rise to most complaint probably because more patients need these basic facilities. One of

Table: 12.6

Primary health care facilities in the Subregion, 1987.

Code in Fig.12.1	Primary Health Care Centre	Centre Grade	Health Centre Facility					
			Dental	X-ray	Lab.	Midwif.	Ambul.	Vaccinat.
1	Sarat Abidah	4	x	x	x	x	x	x
2	Alharajah	3	x	x	x	x	x	x
3	Alfarashah	3	x	-	x	x	x	x
4	Sabat B. Bishr	3	x	x	x	x	x	x
5	Alfayed	3	x	-	x	x	x	x
6	Wadi Yawad	3	-	-	-	x	x	x
7	Alarquayn	2	-	-	-	x	x	x
8	Jwof Almamer	2	-	-	x	x	x	x
9	Alasran	2	-	-	-	x	x	x
10	Aljawwah	2	-	-	-	x	x	x
11	Alkhalf	1	-	-	-	x	x	x
12	Alardayn	1	-	-	-	x	-	x
13	Alfarahah	1	-	-	-	x	x	x
14	Alwahabah	1	-	-	-	x	-	x
15	Khadar	1	-	-	-	x	x	x
16	Alqasab	1	-	-	-	x	x	x
17	Alrofghah	1	-	-	-	x	x	x
18	Sarwom	1	-	-	-	x	-	x
19	Wadi Janab	1	-	-	-	x	x	x
20	Majma Alhayan	1	-	-	-	-	-	x
21	Rahat Sanhan	1	-	-	-	x	x	x
22	Almoftah	1	-	-	-	-	x	x
23	Wadi Alhayah	1	-	-	-	-	x	x
	TOTAL	-	5	3	6	20	19	23

Source: Author's Fieldwork, 1987.

these complaints is about the quality of the ambulance service. All primary health care centres in the study area are supposed to have at least one vehicle to serve as an ambulance to take patients who are referred from the centre to hospital, but there are still four health centres without this facility. During his field work the writer heard many physicians complain about the condition of these vehicles, because they were not fully equipped for emergency use and most of them were unsuitable for the rugged area they often have to work in. Maintenance is a common problem.

Another common weakness of the primary health care system in the area is the short time on average that doctors spend with their patients, because of staff shortages, and the hours that the centres are open. The normal working hours of the centres are eight hours and 50 minutes for five days a week, with a shorter working day on Thursday, although the most busy centre at Sarat Abidah is open for much longer. There is no health provision on Friday even for emergency cases.* Patients who need attention then have to go to the hospital at Khamis Mushayt or Dhahran Aljanub up to 100 km distant.

While these hours of opening appear reasonable by western standards, the level of demand often means that physicians can spend only a very short time with each patient, although this varies greatly from centre to centre and from time to time. Afternoon periods and Thursday mornings seem the most busy but because there is no appointment system busy spells alternate with other periods

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* The working hours of the health centres are from 7.30 am to 1.20 pm in the morning and three hours from 4.00 pm to 7.00 pm in the afternoon for five days per week. On Thursdays centres are only open from 7.30 am to 12.30 pm. The health centre at Sarat Abidah town opens for much longer -16 hours and 30 minutes six days a week- because of demand. This gives the Sarat Abidah centre a 99 hours a week compared with 49 hours 10 minutes for the others.

when the doctor has no patients to see.

During fieldwork in the area physicians complained to the writer about their work overload when they handle over 100 patients per day at an average of less than four minutes per patient. The writer sat with the physicians in a number of health centres to calculate the time spent with each patient. At Sabat Bani Bishr for example, the mean was 3.4 minutes over a period when nine patients were seen. At Sarat Abidah centre the mean was less than three minutes, just over four minutes at Alfarashah and less than five minutes at Jwof Almamer health centre.

Another weakness of the health service is the poor quality of the buildings occupied by many of the health centres. In visiting each of the centres the writer made a simple classification of them into three groups from good to poor by taking into account various criteria such as the availability of water and sanitation, electricity, adequate space and the doctors' opinions of their facilities. These are summarised in Table 12.7 along with information on whether the centre occupied a government or rented building. It was found that nineteen of the 23 centres were located in rented buildings, often houses, which were not designed as a health facility. Generally their plot sizes were less than 200 square meters containing from five to eight rooms in a one or two story building. Most of them were made of mud, stone or concrete and normally lacked adequate space for staff and patients and had poor sanitation. Only four centres were found to be in purpose-built government buildings, built by the Ministry of Health. These have reasonable space and facilities (Photos 12.1 and 12.2). Three of these four purpose-built centres, those at Sabat Bani Bishr, Wadi Yawad and Alfayed, had been built recently at a total cost of SR 8,488,250 each, and were judged to be good.

Table: 12.7

Building condition of primary health care centres in the Subregion, 1987.

Primary Health Care Centre	Building Possess.		Building Condition		
	Government	Rented	Good	Satisf.	Poor
Sarat Abidah	-	x	-	x	-
Alharajah	-	x	-	x	-
Alfarashah	x	-	-	x	-
Sabat B. B.	x	-	x	-	-
Alfayed	x	-	x	-	-
Wadi Yawad	x	-	x	-	-
Alarquayn	-	x	-	x	-
Jwof Almamer	-	x	-	-	x
Alasran	-	x	-	x	-
Aljawwah	-	x	-	-	x
Alkhalf	-	x	-	-	x
Alardayn	-	x	-	x	-
Alfarahah	-	x	-	x	-
Alwahabah	-	x	-	-	x
Khadar	-	x	-	-	x
Alqasab	-	x	-	-	x
Alrofghah	-	x	-	-	x
Sarwom	-	x	-	x	-
Wadi Janab	-	x	-	-	x
Majma Alhayan	-	x	-	-	x
Rahat Sanhan	-	x	-	-	x
Almoftah	-	x	-	-	x
Wadi Alhayah	-	x	-	-	x
Total	4	19	3	8	12

Source: Author's Fieldwork, 1987.

Photo 12.1 The health centre of Sabat Bani Bishr which was built recently to provide reasonable space and facilities for primary health care

Photo 12.2 The health centres of Alarquayn in a rented building

Another eight were classified as satisfactory but twelve health centres, over half of all centres, were judged to be poorly housed. The poorest were the centres at Wadi Alhayah and Almoftah in the Tihama which were housed in one story mud buildings with only four small rooms each and without enough space or sanitation facilities.

12.7 HEALTH CENTRE ACTIVITIES

The health centres in the study area mainly provide only basic outpatients care involving the physicians examining the patients, diagnosing the medical problem and prescribing treatment or medicine. In fact many examinations are not complete because some centres lack fairly basic equipment like couches and sphygmomanometers. In most centres there are no laboratory test facilities for urine, stools and blood. Where a physician believes a patients needs to be referred to a specialist, the patient is asked to go to the nearest hospital, either to Khamis Mushayt or Dhahran Aljanub.

The total number of recorded outpatient visits to the health centres in 1985/86 was 390,100, an average of about 17,000 patients per year per centre, and a daily average of about 60 visitors per centre.* This means that on average across the subregion there were about 3.3 visits per person in 1985/86. 40 percent (155,096) of the total attendances were by adult males. Adult females constituted only about 28 percent of the total, a low proportion considering that the

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* It should be mentioned that the visit rate could be higher than this because the visit records are incomplete for some of the health centres due to the lack of staff and the short period since the file system was started. Also some centres, such as Wadi Alhayah and Majma Alhayan, were only established at the beginning of 1986 and had just begun to keep records at the time of the writer's survey.

female population outnumbered the males in this area. This low utilization rate by women is probably the result of their lower mobility. Women rely on their husbands or other male relatives to take them to the health centres because they cannot drive and cannot under the Islamic tradition travel without a male relative. Another important factor lowering the number of women attending health centres would be the lack of females physicians. Only two of the 32 physicians in the area are women. One of those is at the health centre in Sarat Abidah and the another one in Alharajah centre, and both of those centres tend to receive rather more female patients as a result.

Children under twelve years of age made up nearly 33 percent of the total patients visiting health centres in 1986, again a relatively low figure when one considers that this age group makes up roughly 44 percent of the total population.* It could be that children need less medical attention but again the number of girl patient visits was much less than for boys. This could again reflect the lack of female doctors to treat girls.

Fig. 12.6 shows the monthly number of patients attending the centres during 1985/86 by sex and age group. The record for some centres was incomplete but a few variations are apparent in attendance rates throughout the typical year. For example the ninth month was a light one for patient visits in 1985/86 because this was the main month of Ramadan where the health centres worked shorter hours. This was followed by the three busiest months of the year when a backlog of patients visits were dealt with and when the number of women and child patients was much higher than

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* The figure of 32.5 percent of total patient visits to health centres in the subregion being by children in 19985/86 compares closely with the figure of 31.3 percent for the whole of Asir region in 1986.

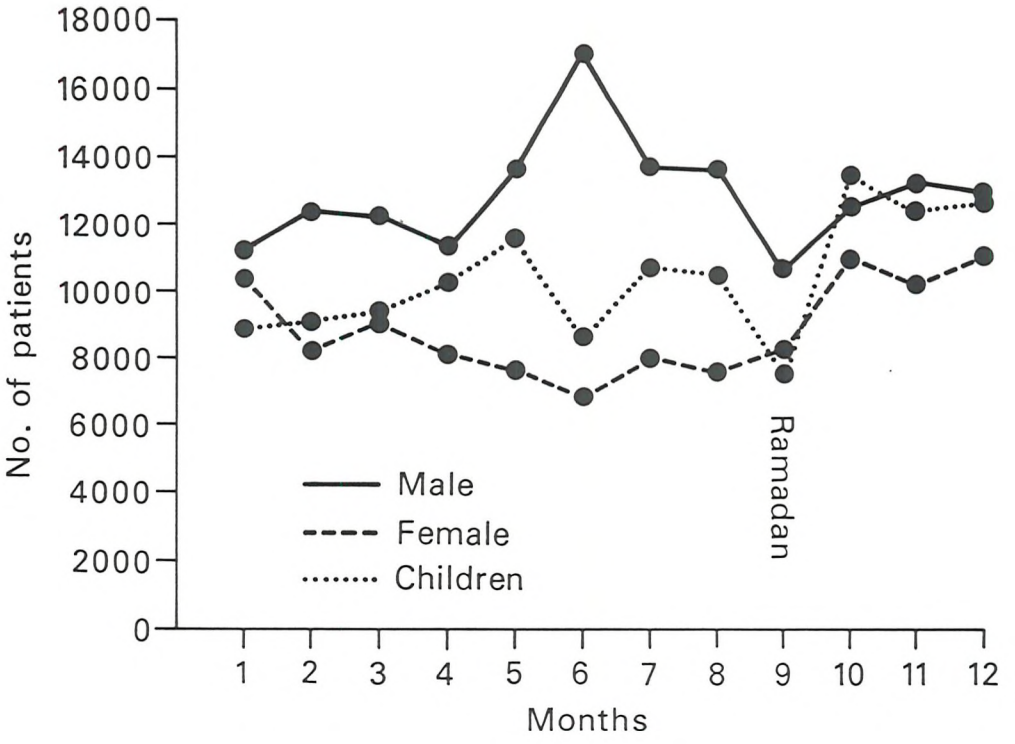


Figure 12.6 Monthly attendance at Health Centres by sex and age, 1985-1986

usual. This is the main summer holiday period when schools are closed and it is easier for families to seek medical care for their children and women. Extra work is generated by incoming tourists and pilgrims from Yemen to Makkah passing through the area.

Brief reference has already been made to the number of patient visits made to centres with many more patients attending the larger higher grade centres. It is now worthwhile to examine the different rates of attendance by men, women and children at each centre to see what variation there is from centre to centre. Table 12.8 gives this data for 1985/86. Sarat Abidah town health centre, as the only grade four centre in the subregion, dealt with 147,000 patient visits, or 38 percent of visits made to all the 23 centres in the study area. This was followed by Alharajah with 10.5 percent of all visits, Alfarashah (6.5 percent) and Sabat Bani Bishr (5.9 percent), all grade three centres. No other centre accounted for more than 4 percent of all patient visits and most of the small grade one centres accounted for no more than 2 percent of all visits.

As is to be expected the visit rate by adult males was greater than by adult females in all centres, but in a few centres children made up the largest of the three groups. The proportion of attendances by adult males is markedly higher than adult females or children in the Tihama health centres. At Alfarashah they formed 47 percent, at Wadi Alhayah 49 percent, Almoftah 54 percent and at Aljawwah 59 percent of all visiting patients. Consequently the proportion of patient visits by women and children at those centres was low but especially for women. They accounted for only 22 percent of the total patients at Alfarashah, 21 percent at Almoftah, 19 percent at Wadi Alhayah and 17 percent at Aljawwah centre. In contrast the proportion of

Table: 12.8

Percentage of attendances by sex and age at the health centres in the Subregion, 1985/86.

Primary Health Care Centre	H.C. Grade	Male %	Female %	Child. %	Total %
1: Mountain Centres	-				
Sarat Abidah	4	39.5	29.8	30.7	37.7
Alharajah	3	34.4	30.5	35.1	10.5
Sabat B. Bishr	3	39.0	29.0	32.0	5.9
Alfayed	3	40.5	26.0	33.5	2.7
Wadi Yawad ****	3	44.6	24.3	31.1	1.8
Alarquayn	2	37.7	28.3	34.0	3.3
Jwof Almamer	2	35.5	27.4	37.1	3.9
Alasran	2	36.5	28.4	35.1	3.2
Alkhalf	1	41.8	25.7	32.5	1.7
Alardayn *	1	46.2	24.3	29.5	1.8
Alfarahah	1	35.5	27.6	36.9	1.4
Alwahabah	1	43.6	25.6	30.8	3.4
Khadar *****	1	38.6	28.6	32.8	0.3
Alqasab	1	40.7	26.8	32.5	3.2
Alrofghah **	1	35.0	28.8	36.2	1.3
Sarwom *	1	39.1	25.4	35.5	1.2
Wadi Janab	1	33.9	26.1	40.0	2.6
MAjma Alhayan ***	1	37.0	26.9	36.1	0.6
Rahat Sanhan *	1	37.0	25.7	37.3	3.8
Mountain Total	-	38.6	28.5	32.9	90.2
Base Total	-	135944	100429	115641	352014
2: Tihama Centres	-				
Alfarashah	3	47.3	22.2	30.5	6.5
Aljawwah **	2	59.1	17.4	23.5	2.1
Almoftah *****	1	54.0	20.7	25.3	0.4
Wadi Alhayah ****	1	49.3	19.3	31.4	0.7
Tihama Total	-	50.3	20.8	28.9	9.8
Base Total	-	19,152	7,941	10,993	38,086
Subregion Total	-	39.8	27.8	32.5	100.0

* Data deficient by 1month
** Data deficient by 2 months
*** Data deficient by 3 months
**** Data deficient by 4 months
***** Data deficient by 5 months

Source: The General Directorate of Health Affairs in Asir, Monthly reports,1985/86.

women patients attending the health centres of Sarat Abidah and Alharajah was slightly higher than at other centres, at 30 and 31 percent respectively, which may partly be due to the presence of women physicians in these centres. But women made up only 28.5 percent of patients in all the mountain centres combined and men about 39 percent.

Data was also collected on the use of various services, like dental and X-ray treatment, now available at some of the higher grade centres, but the very recent introduction of these services and the incompleteness of the records make it difficult to draw conclusion on the success of these services. It does seem that they are often seriously underused but this might be expected of a new service until it becomes fully established and known about by the local population. Dental treatment is an example of a recently established element of the health service. Of the five health centres with dental facilities and a dentist, the service at four was only started up in 1986. Only that at the Sarat Abidah health centre has existed for several years. Some 20,300 dental treatments or examinations were made by those five dentists in 1985/86, which means that 5.2 percent of all patient visits to a health centre were for dental purposes. That is, less than one person in five in the subregion visited a dentist in 1985/86 if one assumes that each dental patient made only one visit to the dentist. But this low figure could partly result from the dental services at four of the five centres only starting up during the year in question. 55 percent of all these dental visits were to the Sarat Abidah health centre where a dentist has been longer established, the other 45 percent of visits being shared between the other four dentists at Alharajah (27 percent), Sabat Bani Bishr (10 percent), Alfayed (5 percent) and Alfarashah health centre (3 percent).

Levels of use of X-ray facilities were even lower. Three health centres are equipped with basic X-ray facilities - Sarat Abidah, Sabat Bani Bishr and Alharajah- suitable for the examination of fractures. About 3,000 patients were X-rayed in 1985/86 but 93 percent of these were done at Sarat Abidah and only 7 percent at the other two centres. It therefore seems illogical to have X-ray facilities and a technician at Sabat Bani Bishr centre, only twelve km from Sarat Abidah when so little use is made of them. Only 134 X-rays were performed at Sabat Bani Bishr in 1985/86.

Six centres are equipped to carry out basic laboratory tests of stool, blood and urine samples. The total number of urine test made in 1985/86 was 7,500, for stools 4,600 and blood 14,100. Only two tests were made for leishmaniasis, a once common skin disease in the Tihama in the whole year. Not surprisingly 30 percent of all of these tests were conducted at the Sarat Abidah health centre which also dealt with nearly 38 percent of all patient visits in 1985/86.

While some parts of the services are underused at present, there are often other basic needs that are not met. The health centres are not well equipped to conduct preventive medicine by means of community health education and the teaching of the needs for sanitation and cleanliness, proper nutrition, antenatal care, as well as innoculation. The staffs are not trained for these and seldom go into the community to teach health education. However, some preventive health care is conducted, particularly the immunisation of children. Some doctors conduct health education in schools. By law children should have undergone a full set of vaccinations against polio, diphtheria and measles before a birth certificate is issued. But, in rural area like this and especially in nomadic areas like the Tihama, little attention is paid to this. As a

result child mortality rates amongst the nomads are high.

Table: 12.9
Vaccines given at health centres in the Subregion, 1985/86.

Antigen	Number vaccinated
Poliomyelitis	
1st dose	2,005
3rd dose	1,733
Diphtheria	
1st dose	1,979
3rd dose	1,759
Measles	1,491
Tetanus	1,763
B. C. G.	1,370
Anti Scorpion	312
Anti Snake	56
Total	12,466

Source: The General Directorate of Health Affairs in Asir, Monthly reports, 1985/86.

The number of vaccinations conducted at the study area's health centres in 1985/86 are shown in Table 12.9. A total of only 12,500 vaccinations were made but this would have been to far less than 12,500 young children because some children would have had more than one vaccination. This means that with a child population of about 21,000 (children less than six years old) in the area many, probably the majority, were not receiving proper preventive immunization in their early years. No record is kept for children who received vaccines so it is not possible to identify the degree of preventive medicine being practised on the children. Some parents may immunize their child against poliomyolitis but not measles. Other children would receive the first dose of diphtheria but not the third dose. It is unlikely that many children receive a complete set of vaccinations in the study area, particularly in the Tihama area.

12.8 DISTANCE TRAVELLED TO HEALTH SERVICES

It has been shown that the majority of the study area's villages have reasonably good physical access to primary health care centres but a significant minority remain poorly served. About 70 percent lie within ten km of health centres but some are up to 30 km or more away. But this conclusion is based only on the data provided by interviewing the health centres' staffs on their catchment areas. Because the people are free to chose which clinic they visit, the actual visitation patterns may mean that many patients travel further for their health care than to the nearest clinic intended to serve their village. Some may feel they get better treatment at a particular centre which is not the nearest one to them.

It has already been noted, for example, that because there are only two women physicians in the area the two health centres where they are based (Sarat Abidah and Alharajah) receive rather more women patients. Some of these women prefer to travel farther to those clinics than use one closer to their homes where only a male doctor is available.

Because the writer believed that some patients do not go to their allotted health centre, a sample survey was conducted by a short questionnaire to get more information on patients travel to health centres (See Appendix D). These were conducted at the 23 centres where about 50 patients at each centre, and a total of 1137 in all, were asked their home village location. The responses covered 254 villages of the 407 in the study area. Because information was also sought on travel methods and frequency of visits to the health centre to see how these were related to distance of travel, other questions were also asked to cover these points (See Chapter One).

Table 12.10 shows the distances travelled by the sample of responding patients to the health centres and these results confirm and add detail to the village catchment pattern already established. 83 percent of the patients said they lived within ten km of the health centre they were visiting. This compares with the result of the catchment survey which showed that 70 percent of the villages in the area lie within ten km of a health centre. The higher proportion of patients living within this distance is to be expected in this survey because most health centres are located in or near to the larger villages so as to better serve as many people as possible.

Table: 12.10

Distance travelled to health centres in the Subregion, 1987.

Distance (km)	Total sample	Percent	Cumul. percent	95 % confidence limits of sample*	
				lower	upper
< 1	239	21.0	21.0	18.6	23.4
1 - 5	478	42.0	63.1	39.1	44.9
6 - 10	228	20.1	83.1	17.7	22.5
11 - 15	86	7.6	90.7	6.0	9.2
16 - 20	38	3.3	94.0	2.2	4.4
21 - 30	32	2.8	96.8	1.8	3.8
> - 30	36	3.2	100.0	2.2	4.2
TOTAL	1,137	100.0	100.0	-	-

* These were calculated based on the formula:

$$S.E = \sqrt{\frac{p\% \times q\%}{N}} \text{ percent of N}$$

Source: Author's Field Survey, 1987.

One could expect more of those living closer to the centres to show up in the sample survey and this in fact becomes clear in Table 12.10. No less than 63 percent

reported that they travelled no more than five km to the centre they were visiting. The village catchment survey showed only 32 percent of villages lie within five km of the nearest centre, so that it does appear that people living closer to a clinic will tend to use it more often. Over one out of five of those sampled lived within one km of the clinic, which probably means in most cases they live in the same village as the health centre. Those living more than ten km from the health centre made up only 17 percent of the sample whereas the village catchment survey placed 122 villages (30 percent) out of the 403 total at this distance.

Just as patients living close to health centre are over-represented in the sample survey, so those living furthest away tend to be under-represented. It is interesting to note, however, that 36 patients (3.2 percent) of the sample reported that they lived over 30 km from the centre they were visiting, whereas only 1.7 percent of villages were classified as that far from a health centre.

Table 12.11 breaks down this pattern of distances travelled to show variations between the 23 health centres. It is immediately clear that at many centres more than half of the patients reported that they lived no more than five km away. In six centres over 80 percent of respondents were in this category because these centres largely attract patients from the village in which the clinic is located and other villages closeby. Different reasons would explain this pattern for different centres. In some, as at Wadi Janab and Alrofghah in the eastern mountains, the two centres are only ten km apart and serve groups of closely-linked villages, so that there is little need for people to travel large distances to obtain health care. In other cases, like Almoftah in the Tihama, the settlement is remote and the services of the clinic are so limited that one would expect

Table: 12.11

Distances travelled to primary health care centres in the Subregion, (sample, percent).

Primary health care centre	Distances (km)							
	<1	1-5	6-10	11-15	16-20	21-30	>30	Total
Sarat Abidah	12.0	18.0	16.0	16.0	18.0	8.0	12.0	100.0
Alharajah	12.0	44.0	28.0	10.0	6.0	-	-	100.0
Alfarashah	30.6	2.1	10.2	14.3	10.2	12.2	20.4	100.0
Sabat B. Bishr	3.9	39.2	29.4	21.6	3.9	2.0	-	100.0
Alfayed	18.0	66.0	14.0	2.0	-	-	-	100.0
Wadi Yawad	4.1	65.3	8.2	16.3	4.1	2.0	-	100.0
Alarquayn	13.7	27.5	35.3	13.7	2.0	7.8	-	100.0
Jwof Almamer	10.0	28.0	12.0	22.0	20.0	6.0	2.0	100.0
Alasran	18.2	44.0	32.0	4.0	-	2.0	-	100.0
Aljawwah	5.9	23.5	51.0	19.6	-	-	-	100.0
Alkhalf	24.0	40.0	24.0	-	8.0	2.0	2.0	100.0
Alardayn	34.0	44.0	12.0	10.0	-	-	-	100.0
Alfarahah	29.2	45.8	25.0	-	-	-	-	100.0
Alwahabah	3.9	58.8	35.3	-	-	-	2.0	100.0
Khadar	24.5	71.5	2.0	2.0	-	-	-	100.0
Alqasab	32.0	48.0	12.0	4.0	-	-	4.0	100.0
Alrofghah	60.0	32.5	5.0	2.5	-	-	-	100.0
Sarwom	20.0	38.0	42.0	-	-	-	-	100.0
Wadi Janab	50.0	40.0	10.0	-	-	-	-	100.0
Majma Alhayan	54.0	14.0	24.0	6.0	2.0	-	-	100.0
Rahat Sanhan	20.0	64.0	10.0	4.0	2.0	-	-	100.0
Almoftah	8.4	72.9	10.4	-	8.3	-	-	100.0
Wadi Alhayah	4.0	40.0	8.0	4.0	-	14.0	30.0	100.0

Source: Author's Field Survey, 1987.

few patients to come any distance to use it.

A smaller number of other centres attract patients from a wider catchment because they are the only clinic located in an area of widely dispersed settlement. This is the case of Alasran and Alwahabah health centres in the northwestern mountain zone. Hence about one third of the sampled patients at each of these clinics reported that they had travelled between six to ten km.

Finally one can identify from the travel patterns that the higher grade health centres are characterized by much larger catchments because people are prepared to travel greater distances, often by-passing lower grade clinics on the way, to get to the better services. The survey shows that, of the patients sampled at the Sarat Abidah health centre, more than half had travelled over ten km and 20 percent had travelled more than twenty km. To a lesser extent a similar pattern is seen with some, but not all, of the grade three centres. Alfarashah in the Tihama also attracted a large part of its sample from long distances, unlike the much lower grade clinic at Almoftah, also in Tihama. Similarly Wadi Alhayah clinic in the south Tihama, while only a grade one clinic, took nearly half of its sampled patients from more than ten km away and many from much further than that. Of course, the major reason for the wide catchments of these two Tihama centres is the widely dispersed nomadic settlement pattern in this area, which means that, for many, a visit to a health centre involves a long journey. But in the mountain area, where settlements and health centres are more closely spaced, the sample survey did reveal that other higher grade centres like Wadi Yawad, Alharajah and Sabat Bani Bishr, also tend to attract patients from greater distances.

The tendency for patients to travel longer distances to

seek better treatment at a higher grade centre is confirmed by Fig. 12.7 A and B. These two maps compare the travel patterns of sampled patients going to grade three and four centres with those going to grade one and two centres. It is clear from this that there is probably a considerable variation between the actual catchments of health centres and the officially designated catchments shown in Fig. 12.3.

While it is possible to suggest from an academic overview of the pattern of health centre use that broad relationships exist between the grade of health centres and the distances that patients are prepared to travel to them, the ordinary villager in the study area does not have that same high level of information on health facilities. The question can therefore be asked: how does the patient decide which centre to visit on a particular occasion?. The sample questionnaire could not specifically ask patients, via their physician, why they chose to visit him in preference to another doctor in another clinic closer to their home. But most patients spoken to in the course of the survey were aware of the different quality of doctors and services in the clinics available to them in the area. The people of the area were prepared to talk about their illnesses and where they believe they can find the best doctor and health centre. Some patients said they had been told by friends which clinics gave injections, or had X-ray and other facilities.

Furthermore there is not as yet a fully active file system in operation by which the doctor keeps a record of each patient visit and the treatment given. Because patients are not required to visit the health centre nearest to them, they can visit more than only one centre. As a result many doctors report that a patient will often travel to several health centres and be seen by several doctors within

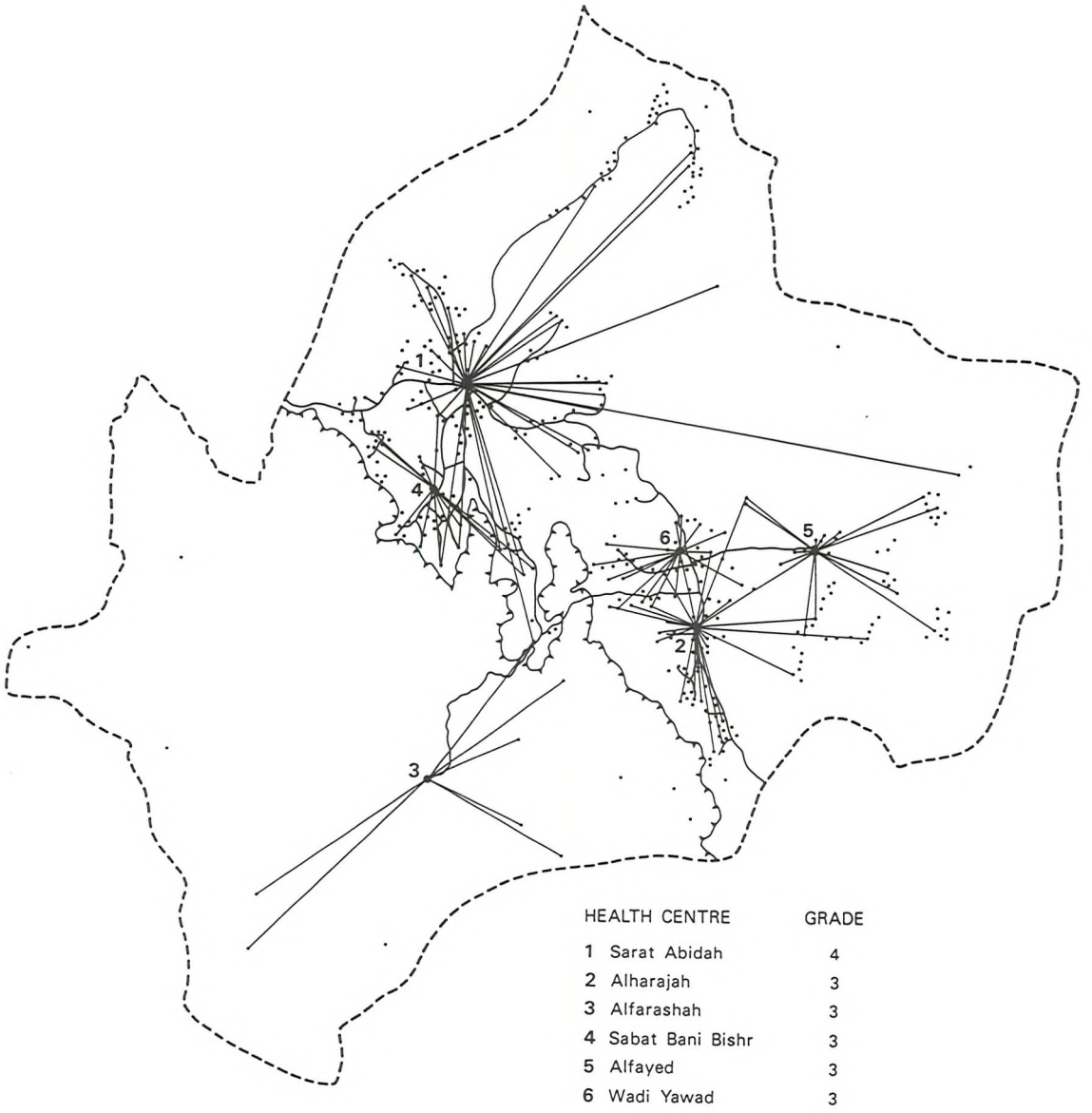
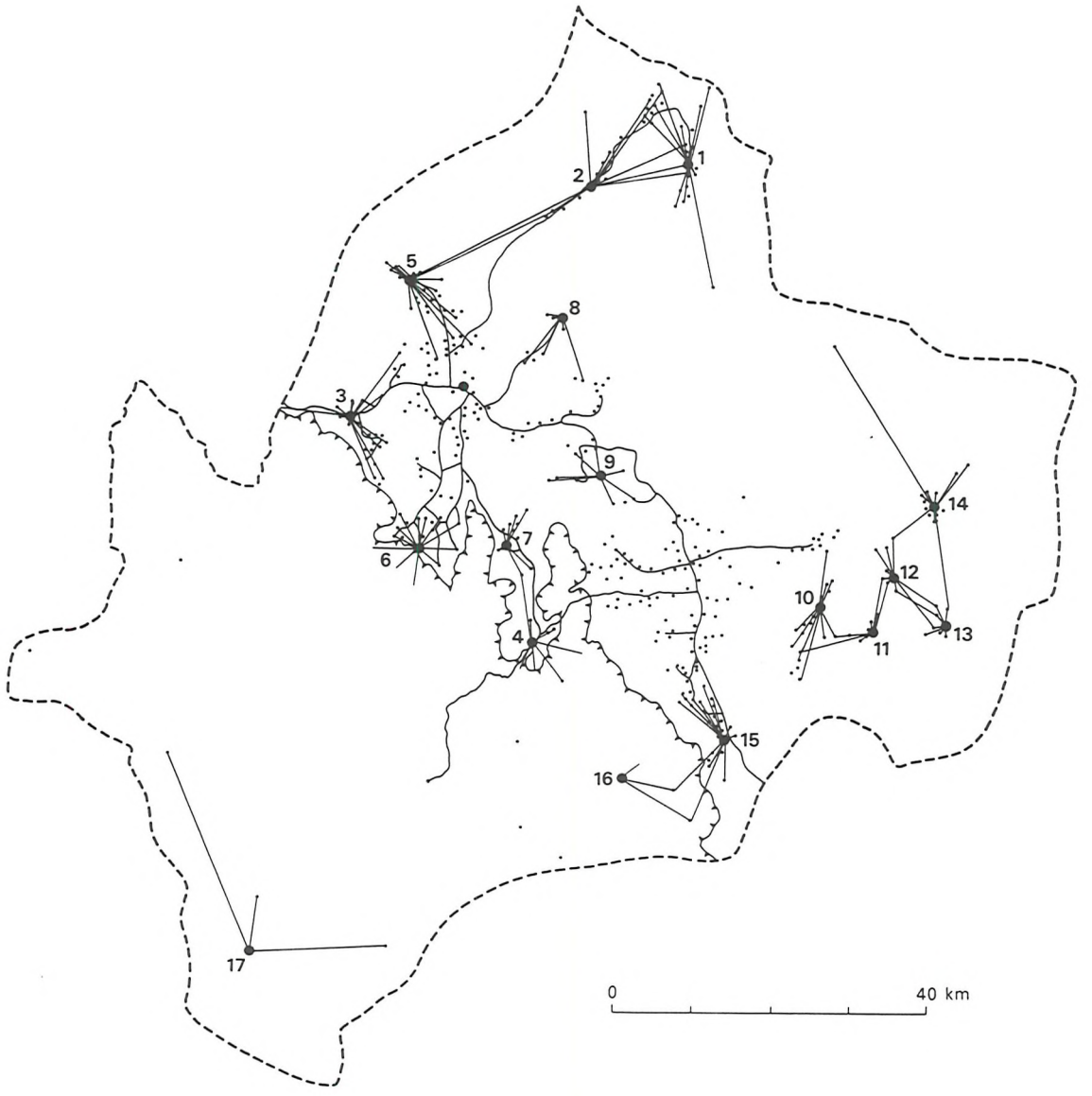


Figure 12.7a Distribution of patient trips to Grades 4 and 3 Health Centres by a sample survey, 1987



HEALTH CENTRE	GRADE	HEALTH CENTRE	GRADE	HEALTH CENTRE	GRADE
1 Alarquayn	2	7 Alardayn	1	13 Majma Alhayan	1
2 Jwof Almamer	2	8 Khadar	1	14 Alqasab	1
3 Alasran	2	9 Alfarahah	1	15 Rahat Sanhan	1
4 Aljawwah	2	10 Sarwom	1	16 Almoftah	1
5 Alwahabah	1	11 Wadi Janab	1	17 Wadi Alhayah	1
6 Alkhalf	1	12 Alrofghah	1		

Source: Author's survey,1987

Figure 12.7b Distribution of patient trips to Grades 2 and 1 Health Centres by a sample survey, 1987

the space of a few days. Having received medicine from one physician in one centre but not feeling any better, the patient may next day go to another centre to have more examinations and to get more medicine. Some will often insist on injections and laboratory tests they do not need.

It is not known how widespread is this peripatetic behaviour of some patients and how many of total patient visits are of this type. But doctors suggest that some of the longer distance journeys by patients are not really necessary and could be one cause of the work overload of some doctors. A family file system recorded at each centre but centrally collated, recording all patient treatments, might go some way to ensure that patients got a better service and did not need to seek ever more treatment, at different centres. It would also give doctors more time to properly diagnose and deal with the illnesses.

12.9 MODE OF TRAVEL

Even though it has been shown that most patients are within reach of a health centre, for the great majority some form of transport is essential, especially in view of the often rugged terrain. The sample survey, therefore, asked patients the means of transport they had used to reach the health centres in order to see if the means of transport and distance travelled were related. The means of transport reported are listed in Table 12.12. It is clear that the vast majority (73 percent) used a car to reach the health centres.* It is no surprise that cars are widely used since there is no alternative public transport. Taxis are

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* There is no data available on car ownership rates in the study area but they are thought to be high, though less so in the Tihama where there are few roads.

expensive to use, and many people in the sample lived too far from the clinic to walk to it. The 11 percent of the sample reporting that they had come in a friend's car were more commonly those on low incomes or the elderly.

Table: 12.12
Means of travel to health services in the Subregion, 1987.

Means of Transport	No. Respond.	Percent	95 % Confid. Limit	
			Lower	Upper
Family Car	830	73.0	70.4	75.6
On Foot	177	15.6	13.4	17.8
Friend's Car	120	10.6	8.8	12.4
Taxi	10	0.9	0.3	1.5
Total	1137	100.0	-	-

Source: Author's Field Survey, 1987.

Table 12.13 shows that the mode of transport varies with distance travelled to the health centre. As can be expected a large number of those travelling less than one km walked. An almost identical number came in their own family car. But as the distance to the health centre increases, the family car or, to lesser extent, a friend's car becomes the main means of transport. In the distance range one to five km, 77 percent came by the family car and 12 percent walked. Almost no one reported walking to a health centre over a distance greater than five km although two of the 198 patients surveyed in the Tihama area reported that they had walked more than 30 km to the health centre at Wadi Alhayah in an area where few people own cars. For distances over eleven km, either the family car or a friend's car was reportedly used by all patients questioned in the sample. None of the ten patients who used a taxi travelled more than ten km, partly because of the high cost and partly because taxis do

not operate widely. Ambulance use is only available for those who need to be transfered from the health centres to the hospital.

While car use is the predominant method of reaching the health centres, one might expect this to vary across the study area in view of the difference in village settlement patterns, the accessibility of health centres, the availability of roads and the levels of private car ownership. Data on transport mode to reach the 23 health centres has been aggregated from the sample survey in Table 12.14 for the six subemirate areas. From this it is clear that car use is dominant in all areas but that its degree of dominance varies. It is especially high in the Alarquayn area, where 94 percent used cars to reach the single health centre. Earlier in the chapter it was pointed out that a half of the 31 villages in this mainly nomadic northern area lie more than eleven km from the health centre and only a small number of people live very close to the clinic. Much lower levels of own car use were reported at Alharajah, Alfayed and Alfarashah health centres. It will be recalled that both Alfayed and Alharajah have a large majority of their villages within ten km of their health centres. Over half of the villages in Alfayed lie within five km of their health centres. A significant minority of respondents in these samples reported that they had walked to the health centres, while others used friends' cars. A similar pattern was reported at Alfarashah in the Tihama although here the lower level of own car use reflects the lower levels of individual vehicle ownership in this predominantly nomadic area.

The types of road available in an area could be an important influence on the frequency with which people make trips to health services (Gesler 1984, Egunjobi 1983, Annis

Table: 12.13

Mean of transport by distance from health centres in the Subregion, (sample, percent).

Mode of Transport	Distances (km)						
	<1	1-5	6-10	11-15	16-20	21-30	>30
Family Car	47.7	76.8	88.6	86.6	73.7	68.8	63.9
On Foot	47.3	12.1	1.8	-	-	-	5.5
Friend's Car	3.3	10.3	8.8	14.0	26.3	31.2	30.6
Taxi	1.7	0.8	0.8	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table: 12.14

Mode of travel to health centres by subemirates in the Subregion. (sample, percent).

Subemirate	No. of Villages	No. of Health Centres	Mean of Transport				
			Family Car	On Foot	Friend. Car	Taxi	Total
Sarat Abidah	183	9	77.7	15.4	6.2	0.7	100.0
Alharajah	108	3	65.8	12.8	20.1	1.3	100.0
Alfayed	65	6	72.1	19.7	6.9	1.3	100.0
Alarquayn	31	1	90.2	5.9	3.9	-	100.0
Aljawwah	6	1	76.5	17.6	5.9	-	100.0
Alfarashah	10	3	60.5	13.6	25.2	0.7	100.0

Source: Author's Field Survey, 1987.

1981). In the study area with its often rugged terrain the modern road network has only been established recently in the main mountain area and is still largely non existent in the Tihama area. The majority of the area's villages are still only connected by dust roads which are usually very rough. Some villages are now better served by asphalt roads especially those close to the main Khamis Mushayt- Najran highway that runs through the study area. Asphalted roads are now being increasingly laid to villages near this highway.

Table: 12.15

Type of road used to travel to health services in the Subregion, (sample, percent).

Subemirate Area	Type of Roads			
	Asphalt	Dust	Asphalt-dust	Total
Sarat Abidah	56.6	34.7	8.7	100.0
Alharajah	48.3	50.3	1.4	100.0
Alfayed	2.1	97.9	-	100.0
Alarquayn	23.5	76.5	-	100.0
Aljawwah	51.0	35.3	13.7	100.0
Alfarashah	10.9	89.1	-	100.0

Source: Author's Field Survey, 1987.

But when the sampled patients were asked the types of roads they had travelled on to reach the health centres, 62 percent said they had used dust roads, 34 percent said they used asphalt roads and 4 percent had used a combination of the two types. Table 12.15 shows the types of roads, by subemirates, used by those surveyed to reach health services. In Sarat Abidah and Aljawwah areas, the majority of patients travelled on asphalt road, as had nearly a half of patients at the Alharajah centres. All three of these areas are bisected by major highways from which networks of asphalted roads are now spreading. In contrast, the majority

of patients using the health centres in Alfayed, Alfarashah and Alarquayn areas had travelled to the health centres on dust roads since these areas are situated at the extreme ends of the asphalted highway system.

For additional information on these journeys the writer asked some patients at a few health centres how easy or difficult they had found the journey to the clinic. Many of them replied that the journey had been difficult and uncomfortable. Even those who had travelled on asphalt roads said the journey was difficult. Patients at Majama Alhayan health centre in Alfayed area in the far east of the subregion were asked how long their journey had taken them on the dust roads and most replied a journey of six km took between 25 to 40 minutes by car. In the Tihama area where the terrain is more difficult and the condition of roads very bad, travel is even slower and in the event of rain most of the roads are impassable.

12.10 FREQUENCY OF VISITS

There is no detailed official data on the utilization rate of health services in the study area or even at the national level, although one would expect differences to occur between the various groups of the population in terms of the frequency of visits. It is more likely that elderly people would visit health centres more often than the young, and infants more than adults. At the national level one would expect urban people to utilize health facilities to which they are more accessible than the rural people. Reference has already been made to the average annual visit ratio calculated from the total number of visits recorded at the 23 health centres in the subregion in 1985/86 compared with the population. This gave an average rate of 3.3 visits

per person per year with adult males using the services more than females. This figure compared with 5.3 visits per person for the Asir region.

But this is a very crude figure which assumes that all visits were properly recorded by physicians in all centres when the record system was only just being established. Even if accurate, it tells us nothing of the variation in visit rates from centre to centre or in relation to influencing factors such as distance travelled to health centres. The writer's sample questionnaire attempted to obtain information of this type.

Table: 12.16

Frequency of visit to health centres in the Subregion, 1987.

Freq. of visit (per month)	Total Sample	Percent	95 % Confident Limits	
			Lower	Upper
Up to 1 time	557	49.0	46.0	52.0
2 "	261	23.0	20.5	25.5
3 "	146	12.8	10.8	14.8
4 "	72	6.3	4.9	7.7
5 "	54	4.7	3.4	6.0
> 5 "	48	4.2	3.5	4.9
Total	1137	100.0	-	-

Source: Author's Field Survey, 1987.

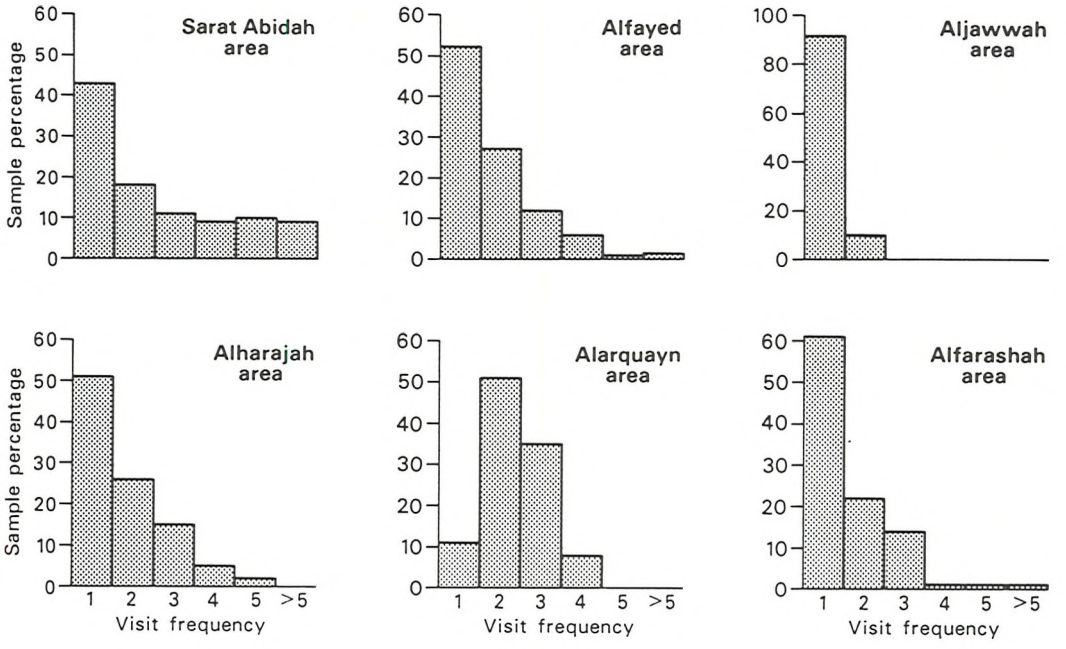
Table 12.16 shows the global figures for frequency of visits reported by the 1,137 patients surveyed in the 23 centres. It would appear from these figures that the patients sampled visit their health centres much more frequently than the average 3.3 times per year derived from the records. This sample shows that for half of them a monthly or less frequent visit to the clinic is the normal pattern but that considerable numbers visit at one weekly to

two weekly intervals. A few visit more or less daily but these would include many who need daily treatment such as diabetics.

Fig. 12.8 shows the differences in visit frequencies of the sample from health centres in the six subemirate areas within the subregion. It seems that the sampled patients in the Sarat Abidah area visit their health centres more frequently compared with other areas. About 57 percent of patients said they visit the health centre more than once per month, 19 percent reported that they came four or more times a month. The health centres in Alharajah, Alfayed and Alarquayn show similar results. Nearly a half of the patients at Alfayed and Alharajah reported that they visited the centres more than once a month but visit rates of four or more times per month were low. Alarquayn showed a similar pattern of visit frequency but with the majority reporting at least two visits per month but none of over four times per month.

The two areas containing a greater nomadic population, Alfarashah in the Tihama and Aljawwah on the edge of the Tihama, showed lower visit rates with the monthly visit group easily the dominant group. In the case of the Alfarashah centre this would be because of the lack of mobility of the nomads to allow them to reach the health centres more frequently.

There is a strong relationship between visit frequency and distance travelled to the clinics. As can be seen in Table 12.17, the majority of the patients who visit health centres most frequently travelled the shorter distances. Those living within five km tend to make more frequent visits to their health centre whereas those that live farther away tend to make less frequent visits. This is most clearly seen for those living more than sixteen km away,



Source: Author's Field Survey, 1987

Figure 12.8 Frequency of visits to Health Centre by subemirate areas (sample per month)

almost none of which reported visiting their centres more than three times a month. For each group reporting their frequency of visit, those living within five km were dominant because this is where most of the frequent users of the health centres come from.

Table: 12.17

Frequency of visits by distance from health centres in the Subregion, (sample, percent).

Visit Freq. (per month)	Distances (KM)					
	<5	6-10	11-15	16-20	>20	Total
Up to 1 time	55.1	21.0	9.4	4.3	10.2	100.0
2 "	68.6	17.6	7.3	3.8	2.7	100.0
3 "	71.2	19.2	5.5	2.1	2.0	100.0
4 "	75.0	23.6	1.4	-	-	100.0
5 "	75.0	20.8	3.7	-	-	100.0
> 5 "	68.8	18.8	10.4	2.0	-	100.0

Source: Author's Field Survey, 1987.

A chi-square test on the association between the frequency of visits by patients and the distance they live from the health centres was undertaken (Table 12.18). This showed a statistically significant relationship at the 95 percent confidence limit with those living close to the health centres visiting them more often, and those living further away less frequently.

There may also be some relationship between the means of transportation used to get to the health centres and the frequency of visits. Table 12.19 show that of the patients who made up to one visit per month, about 71 percent of them travelled by their family car. As the frequency of visits increases to more than five times a month so the level of car usage rises to 85 percent. Conversely, one might expect the proportion of respondents who rely on a friend's car or a taxi to fall with increased visits. The proportion who

Table: 12.18

Chi-square test for the visit frequency and the distance showing observed values (and expected values in brackets).

Visit frequency (per month)	Distances (km) >5	6-15	>15	Total
Up to 1 time	307 (351.2)	169 (153.8)	81 (51.9)	557
2 times	179 (164.6)	65 (72.1)	17 (24.3)	261
3 "	104 (92.1)	36 (40.3)	6 (13.6)	146
4 "	54 (45.4)	18 (19.9)	0 (6.7)	72
5 "	40 (33.4)	12 (14.6)	1 (4.9)	53
>5 "	33 (30.3)	14 (13.3)	1 (4.5)	48
Total	717	314	106	1137

Chi-square = 50.19
D. F. = 10
Significance = 0.000

Source: Author's Field Survey,1987

walked varied less since these would probably mainly represent those that lived very close to the health centres and could easily make visits at any degree of frequency.

Table: 12.19

Frequency of visits by mode of transport in the Subregion, (sample, percent).

Visit frequency (per month)	Means of transport				
	Family Car	On Foot	Friend. Car	Taxi	Total
Up to 1 time	70.7	14.4	14.0	0.9	100.0
2 "	72.8	18.0	8.0	1.2	100.0
3 "	75.3	13.0	10.3	1.4	100.0
4 "	76.4	16.7	6.9	-	100.0
5 "	75.5	24.5	-	-	100.0
>5 "	85.4	12.5	2.1	-	100.0

Source: Author's Field Survey, 1987.

12.11 THE USE OF HEALTH FACILITIES IN THE MOUNTAIN AND THE TIHAMA AREAS

It has already been noted that the subregion is geographically divided by the escarpment into the more densely and prosperous, well populated mountain area and the more nomadicly peopled Tihama area with its lower living standards, much greater remoteness and much more difficult terrain. Therefore, it is likely that marked differences do occur in the use made of health centres in the mountain and Tihama areas. For this reason, it is possible statistically to test the results of the questionnaire samples for differences in the use pattern of health centres in the two areas.

For this purpose the 939 questionnaire results obtained

from the nineteen health centres in the mountain zone have been compared by the chi-square test with the 198 results obtained from the four health centres in the Tihama area. The Aljawwah health centre on the edge of the scarp is included with the three Tihama centres because most of its patients are from the Tihama. The questionnaire results were tested to examine the relationships between location and the frequency of patients' visits to their health centres. Their home location and the distances they travelled were examined, and location was related to means of travel. In each case a null hypothesis was set up that there was no significant difference between the sampled patients in the mountain and the Tihama in their travel behaviour and that differences could be explained by chance sampling. In each case the chi-square was calculated using $(O - E)/E$ where O is the observed frequency, E is the expected frequency and the degrees of freedom were stated. In each cases a significant difference was found between the samples so that the null hypothesis could be rejected. Table 12.20 shows the observed and expected values for each group of patients for each set of observations. It can be seen that in terms of the frequency of visits to health centres patients in the mountain zone visited their centres more frequently than those in the Tihama. Whereas, for example, 17.8 percent of the respondents in the mountains visited their centres four or more times per month only 3 percent of those in the Tihama visited that frequently. Many more of the Tihama patients (68.2 percent) were visiting their clinics at no more than once a month compared with 44.9 percent in the Sarat, giving a difference in the samples on visit frequencies that is significant at the 99.99 percent confidence level.

When the distances that patients travelled to their

Table: 12.20

Chi-square test for differences between the Mountain and Tihama areas showing observed values (and expected values in brackets).

(A) Visit Frequency

Visit Frequency (Per Month)	Mountain Area	Tihama Area	Total
Up to 1 time	422 (460.0)	135 (79.0)	557
2 "	224 (215.5)	37 (44.5)	261
3 "	126 (120.0)	20 (25.4)	146
4 "	70 (59.5)	2 (12.5)	72
5 "	51 (43.8)	2 (9.2)	53
> 5 "	46 (39.6)	2 (8.4)	48
Total	939	198	1137

Chi-square = 44.77
D. F. = 5
Significance = 0.000

(B) Distance Travelled

Distances	Mountain	Tihama	Total
<5 km	625 (592.1)	92 (124.9)	717
6 - 15 "	255 (259.3)	59 (54.7)	314
>15 "	59 (87.5)	47 (18.5)	106
Total	939	198	1137

Chi-square = 64.31
D. F. = 2
Significance = 0.0000

(C) Means of Transport

Means of Transport	Mountain Area	Tihama Area	Total
Family Car	702 (685.5)	128 (144.5)	830
On Foot	148 (146.2)	29 (30.8)	177
Friend's Car	80 (99.1)	40 (20.9)	120
Taxi	9 (8.3)	1 (1.7)	10
Total	939	198	1137

Chi-squre = 23.94
D. F. = 3
Significance = 0.000

Source: Author's Field Survey, 1987.

health centres is considered, again a highly significant difference, at the 99.99 percent confidence level, was found between the mountain and the Tihama patients. Whereas 66.6 percent of the mountain patients had travelled less than five km to their health centres, the proportion fell to only 46.5 percent in the Tihama. Here 23.7 percent had come over fifteen km, compared with only 6.3 percent in the mountains. This alone would help to account for the much lower rates of frequency of visit to health centres by the Tihama patients.

Finally Table 12.20 (C) shows the differences in modes of transport used by the two groups, which again revealed statistically highly significant differences. More of the mountain patients travelled to their health centres in their own family cars compared with those in the Tihama area (75 percent against 65 percent) whereas use of friends' vehicles was rather more common in the Tihama where levels of car ownership are lower.

In turn these differences in levels of health centre use reflect on the morbidity data collected from the diagnoses and treatment carried out by the physicians, because the doctors can only report on cases that come to them. Thus Table 12.21 summarizes morbidity data for the last three months of 1986 for the two health centres of Sarat Abidah town and Alfarashah representing important mountain and Tihama health centres. It is immediately clear that chest and genito-urinary problems are more commonly diagnosed at the Tihama centre where they together accounted for one third of all patient visits because these are the types of serious health problems that would often make a visit to a clinic essential. In the Sarat Abidah centre, on the other hand, they accounted for less than 20 percent of cases. Here dental and gynecological problems assume more importance than in the Tihama, not because the people in the mountains

Table: 12.21

Morbidity at Sarat Abidah and Alfarashah health centres during, Oct., Nov., Dec. of 1986.

Diagnosed Diseases	Sarat Abidah		Alfarashah	
	Cases	%	Cases	%
Communicable Diseases	24	0.1	109	1.2
Cardio-Vascular	456	1.2	38	0.4
Chest Diseases	5,082	12.9	1,857	20.2
Gastro-intestinal	5,024	12.7	952	10.4
Genito-Urinary	2,280	5.8	1,204	13.1
Gynecology and Obstct.	2,265	5.7	85	0.9
Skin Diseases	2,525	6.4	440	4.8
Musculo-Skeletal	3,538	9.0	633	6.9
Eye Diseases	2,076	5.3	271	3.0
E.N.T. Diseases	5,877	14.9	1,207	13.2
Mouth and dental	5,635	14.3	630	6.9
Wounds, fract. & Burns	1,886	4.8	532	5.8
Minor Surgery	229	0.6	38	0.4
Others	2,609	6.6	1.177	12.8
Total	39,506	100.0	9,173	100.0

Source: The Health Centres of Sarat Abidah and Alfarashah, Monthly Outpatients Statistical Reports, Oct., Nov., Dec., 1986.

suffer more from these but because the Sarat Abidah centre has facilities to deal with them, and the clinic is more accessible to the local population to bother to get help in these matters. In other ways also the Tihama centre has to deal with the more basic and pressing medical needs of the local inhabitants, in dealing with wounds, communicable diseases, ear, nose and throat problems and other unspecified complaints. The Sarat Abidah health centre deals with those as well as others characteristic of a population better served by its doctors. Here gastro-intestinal, cardiological, skin, muscular, and eye problems are more commonly diagnosed because local people are more ready to come forward with these problems.

Unfortunately the data does not allow an analysis to be made of the actual differences in the health of the two areas, as against the health problems of those that seek help. As the chapter has suggested there is often a large difference between the health needs of the total population and those that are getting their needs met.

CHAPTER THIRTEEN

CONCLUSIONS

13.1 INTRODUCTION

This study has been an attempt to examine and analyse the provision of public services in the predominantly rural region of Asir and particularly to evaluate services at the subregional level in the subregion of Sarat Abidah in order to provide a better understanding of their development problems. In particular the study has focused on issues related to the provision of three areas of public services: education, health and municipal facilities and services.

What has been revealed of public service provision in Asir can be seen as an example of a common problem in the regional development of Saudi Arabia, as was indicated in chapter three. Clearly Saudi Arabia has undergone dramatic changes in the development of infrastructural facilities and socio-economic services in recent years. But with this rapid development marked regional imbalances and maldistribution of social facilities and services have been allowed to occur. A geographical study should be well suited to the examination of these spatial imbalances.

This chapter addresses four main points. First, the main findings of this study in the form of a number of general observations on the development of public services in Asir are pointed out. Second, a plan for the future development of public services and facilities in the subregion of Sarat Abidah is suggested. Third, some broader lessons learnt from the study are outlined as far as they could help public service development in the rest of the country. Finally, the writer is aware that this is the first piece of work of this nature carried out in Asir and he therefore makes a number

of suggestions for follow-up research.

13.2 SOME ANALYTICAL AND EMPIRICAL FINDINGS

It does not seem necessary to summarize the research procedures and results reported in the preceding chapters. However, a number of the more important points which came out of the examination of services are worth restating. The examination of the socio-economic features of Asir and its physical infrastructure, and of its subregion of Sarat Abidah, showed how remote and little developed this region of Saudi Arabia was until very recent years. At the time of the 1974 census, near subsistence ways of life were still almost universal in the village and nomad communities, service development had been minimal, there was little contact with the outside world, and over 79 percent of the population was illiterate. The Tihama was an especially backward and remote area.

The provision of public services like education, health and other basic facilities have undergone vast expansion in recent years. The early efforts to develop the whole range of basic services in Asir region produced limited results because of the restricted capabilities of the Kingdom's economy before the 1960s. But progress, especially since 1970, has been impressive. As an example of this, chapter five showed that in the field of elementary schooling in Asir, of the 702 primary schools for boys in the region in 1986, 60 percent were only created after 1975. The rapid expansion in the provision of intermediate and secondary levels for boys followed after the growth of elementary schooling, so that 80 percent of these higher levels schools were established after 1975.

Education for girls has expanded even more recently and

rapidly than for boys, although there are still marked discrepancies in the provision of schools for boys and girls in Asir, so that 61 percent of the region's elementary schools are for boys and only 39 percent for girls. The gap is even wider in favour of boys at the post-elementary level, but this partly reflects the fact that girls' schooling has expanded so recently. 53 percent of all girls' schools in Asir opened after 1980.

But the analysis of the school system in Asir region has shown that many communities still have inadequate access to educational services, particularly at the higher levels and particularly for girls. While the development of boys' schools, particularly at the elementary level, has reached a mature stage of widespread provision in the main settled part of the mountains, schools are much less accessible to many children in the more nomadicly-settled areas of the Tihama and the eastern plateau. It is clear from enrollment data that not all school-age children yet get a primary, intermediate or secondary schooling and that the number of children of all ages in the nomadic areas and girls in the mountain zone who only get an incomplete education is still high.

As in the case of education, most health care services have been developed very recently in Asir and the provision is unequally distributed across the region. It is also obvious that Asir is less well provided with health care compared with other parts of in the Kingdom. Thirteen hospitals, most of them small, and 214 primary health care centres form an inadequate system to serve more than one million inhabitants living in over 4,000 settlements. Many communities and individuals remain far from even basic medical treatment. Yet even this system is vastly better than what existed only ten years ago. Nevertheless the

resources within the system such as staff numbers, equipment, supplies and building facilities remain insufficient to provide the proper curative and preventive services which are basic to the region's health needs. The Asir Health Affairs Directorate is able to do little more than admit to the maldistribution of health services and the disadvantaged condition of much of the rural and nomadic population. Even if more funds were made available to provide more health centres and hospitals, it is unlikely that staff could be found in sufficient numbers.

The discrepancies between levels of services to different parts of the populations are most clearly seen in the area of basic infrastructure provided under municipal developments. While funds have been made available in the last decade for this type of infrastructure, it is clear that the benefits of these have not yet extended far beyond the municipality centres of the region, such as Abha, Khamis Mushayt and Bishah. Municipal services in smaller centres and rural areas are still inadequate and most villages, where the majority of Asir's population live, have enjoyed no municipal benefits.

The enormous cost and effort involved in spreading municipal facilities widely across the rural area have been recognized, so that only 13 percent of Asir's villages were included in the catchment areas of the fourteen municipalities and village clusters that have been defined. But even this has so far proved too ambitious an area to develop. Yet, some officials in the General Directorate of Municipal and Rural Affairs in Asir proclaim that the catchment of the fourteen municipalities and village clusters should take in all settlements in the region.

The more detailed examination of service provision and use in the subregion of Sarat Abidah, which was used as a

case study, largely confirmed the nature of these problems of provision. Firstly, the examination of the rapid expansion of education and health facilities in Sarat Abidah subregion in recent years emphasized the continuing gap between centre and periphery areas in the provision, quality and accessibility of public services, even though the gap between them was even greater a decade ago.

One could be so impressed by the progress made in recent years as to ignore how much more needs to be done. For example, the most widespread facility in the Sarat Abidah subregion is the boys' elementary school. This was found in 64 villages but this means that only one village in six has a boys' primary school. Far fewer villages have other services. Primary health care centres are found in only 23 villages of the 407 villages in the study subregion. In total, all the existing services are only found in 70 villages, leaving 337 villages without any services at all.

The pattern of school provision in the subregion reflects that of the whole region with, as is to be expected, the greater progress made for boys' schools than for girls', and at the lower rather than the higher levels. Thus there are 114 primary schools but only 28 intermediate and secondary schools. At each level boys' schools far outnumber girls' and the mountain area has better provision than the nomad areas. But the fieldwork the author was able to do on the school catchments in the subregion showed how far this unequal provision affected take up of schooling opportunities. Many students still travel more than ten km to reach primary schools and more than 50 km to secondary schools. Because of the gaps in school coverages and the lack of adequate school transportation an estimated 2 percent of elementary school-age boys and 33 percent of girls are not enrolled at the subregion's elementary

schools. The percentages of children who do not attend intermediate and secondary levels are much higher and may be as high as 73 percent of girls not enrolled at the intermediate level and 93 percent at the secondary level.

The quality of that schooling is also low because schools are small in size in order to make them more accessible. With class size small and teachers in short supply, the joining of children of different grades into a single class is widely employed. This may harm the children's progress. The majority of schools are poorly housed with a large number of them in rented accommodation of unsuitable design and lacking enough space, playgrounds, proper sanitation, and other basic school resources like furniture, laboratory equipment and a library.

Health services in the subregion of Sarat Abidah are also available at only one basic level, that of the primary health care centres. Most of these are of the lower grade and there are not many of them. As in the case of schools, the expansion of health services in this area occurred rapidly only from the early 1980s. Since then half of the existing health centres have been created. With only 23 health centres to serve over 400 villages with a total population of about 118,000 scattered across difficult terrain, health care services are still inadequate to deliver effective health coverage to the population. Many village communities remain several km from their nearest medical point. For more than 30 percent of the subregion's villages the nearest health centre is more than ten km away. This inadequate coverage of health facilities is further aggravated by the lack of adequate medical personnel and resources at the centres.

Field survey showed the performance of primary health care centres to be little more than basic outpatients care.

This is mainly due to the shortages of skilled staff, the lack of equipment and suitable buildings, and the work overload. But despite their limitations, the centres appear to be widely used by the surrounding village populations, although many patients travel longer distances to seek better treatment at the few higher grade health centres.

It is clear from the analysis of the spatial provision of public services in the subregion, and the use of them that there are large variations between different parts of the subregion in terms of provision, quality of services, travel patterns of users, and the utilization rates of services. In particular marked variations were revealed between the two major zones of the subregion, the mountain and Tihama areas. But within each of these zones other variations were detected, as for example between the settlements close to Sarat Abidah town and those in the more remote mountain areas and the more nomadic eastern areas. The mountain areas now have a reasonable provision of public services compared with the Tihama where provision remains poor and is matched by lower living standards and much greater remoteness.

Other services, beyond the most basic, are few and far between. Municipal services like refuse collection, piped water, surfaced roads, telephone and electricity supply, reach hardly any of the villages. In fact some of these services are not yet found even in Sarat Abidah town, the main centre of the subregion. It still has no hospital , or higher educational facilities, or even a proper electricity system although it is the centre for a subregion with about 118,000 inhabitants.

The analysis of the use of services showed that improvements to the road network are a significant influence on the utilization of services. With widespread vehicle

ownership, villagers make full use of the roads to travel further for medical help, for shopping, to go to school and for other government services. It is clear from the evidence that as the road network is upgraded the catchment of services is widened and they are more fully used by the local population.

While much progress has been made in bringing services to the subregion, there is clear evidence to suggest that, as for the rest of Asir, the provision is imbalanced and not all services are equally well used or well located. The writer found that no clear criteria were employed in the Sarat Abidah subregion by government agencies to select the sites of various services. Decisions concerning the provision of public facilities are apt to be made by the personal judgment of government officials who are subject to local political pressure, favour and manipulation.

It is also clear from the discussion of development planning in Saudi Arabia presented in an early part of the thesis, that a fairly comprehensive national planning system has been developed to guide the development of the physical infrastructure and socio-economic services in the Kingdom. However, it is a strongly centralized planning system, and the regional dimension in such planning has been insufficiently considered. Despite the fact that one of the basic objectives of the national development plans has been to achieve a balanced distribution of wealth and welfare among all sectors of the population and between all regions, Saudi Arabia still does not have a clear regional policy to fit national plans to regional needs, and to tackle the problems of regional disparities and the lagging rural areas. As shown in chapter three, the more urbanized regions, like the Western and Central regions, have better access to and better quality of public services compared

with the predominantly rural Southern and Northern regions.

The Third development plan (1980-85) has stressed the importance of employing more explicit and coordinated policies for dealing with the regional imbalances and the rural-urban gap in the development of socio-economic services. Apart from this there are no distinct policies to deal with the backward rural areas of the country. All previous national development plans, policies, objectives and programmes were presented in one centralized form without considering the development of the rural areas. The Third development plan has introduced a system of development service centres for the development of all the Kingdom's regions and rural areas. This system of development centres proposed twelve for Asir and one of them for Sarat Abidah subregion. But this thesis has shown that the proposed pattern of development centres in Asir has not worked. Therefore a more detailed pattern of service centres is here proposed for the Sarat Abidah subregion.

13.3 PROPOSED PLAN FOR THE DEVELOPMENT OF PROVISION OF PUBLIC SERVICES IN THE SARAT ABIDAH SUBREGION

From the analysis and evaluation of the existing services in the subregion of Sarat Abidah it is clear that the majority of the communities still suffer from a serious lack of infrastructural facilities. However, any proposal to further improve the level of provision confronts difficulties, such as where to locate new schools, health centres and other services to best meet the needs of the maximum number of people at reasonable cost.

The administrators which the writer interviewed were aware of the need for a properly organized approach to the further development of public services and other

infrastructure in line with the major spatial policy objectives of the Third and Fourth development plans to promote and increase the efficiency of services. Many government officials implicitly favour the provision of services at a number of key villages which can act as the focus for a surrounding of villages, instead of attempting to disperse facilities around a group of villages as was often done in the past. Fieldwork has shown services in major villages are better used than those in smaller villages. The writer therefore proposes that an integrated policy of key village development should be put forward to guide the future expansion of services at the subregional level. The following proposed planning policy is intended to select key villages to act as village service centres with different levels of services and facilities. Such a policy for concentrating facilities and services in selected villages, operated at the subregional level, would have a number of advantages:

1) By concentrating services at local centres, those centres and their services are more likely to be viable.
2) There would be more opportunity to integrate the development of public services and facilities, whereby some educational facilities, for example, could also be used for non-school purposes.
3) By creating key villages in this way, road systems could be developed to increase accessibility between the key settlement and its satellite villages so as to get services to as many people as possible.
4) The resulting better level of service provision could reduce rural outmigration by reducing inequity in the provision of basic facilities and services between rural and urban areas.

5) Such key villages could create new sources of employment, could attract small scale industries and other private enterprises, so raising the relative standard of living of the subregion's rural population.

6) Creating a policy of key villages at the subregional level could stimulate the local people to contribute more to their own development.

The author does not have the data to elaborate this policy and lay out a pattern of key villages for all of Asir. But he has attempted to identify key villages for Sarat Abidah subregion.

In order to achieve a successful key village policy, there is a need to lay proper foundations for its implementation by ensuring that the key villages have suitable catchment areas. In western countries catchments have evolved around centres largely by trade competition, and the introduction of services has generally reinforced these catchments. In Saudi Arabia catchments are less defined and it is more a matter of reorganizing the local subemirate areas which are the traditional community areas grouped around a local subemirate centre. The writer proposes that the six areas presently used in the subregion, which have been inherited from the past when isolation and tribal sentiments were strong, should be reorganized because they are not adequate to proper development planning. It is suggested that the subregion should now be divided into eleven smaller and more compact subemirate units. If all existing subemirate activities cannot be reorganized into these new subemirate areas, these units should at least be set up as "planning areas".

Fig. 13.1 shows the proposed extent and centre for each of these new areas in the subregion. The mountain area

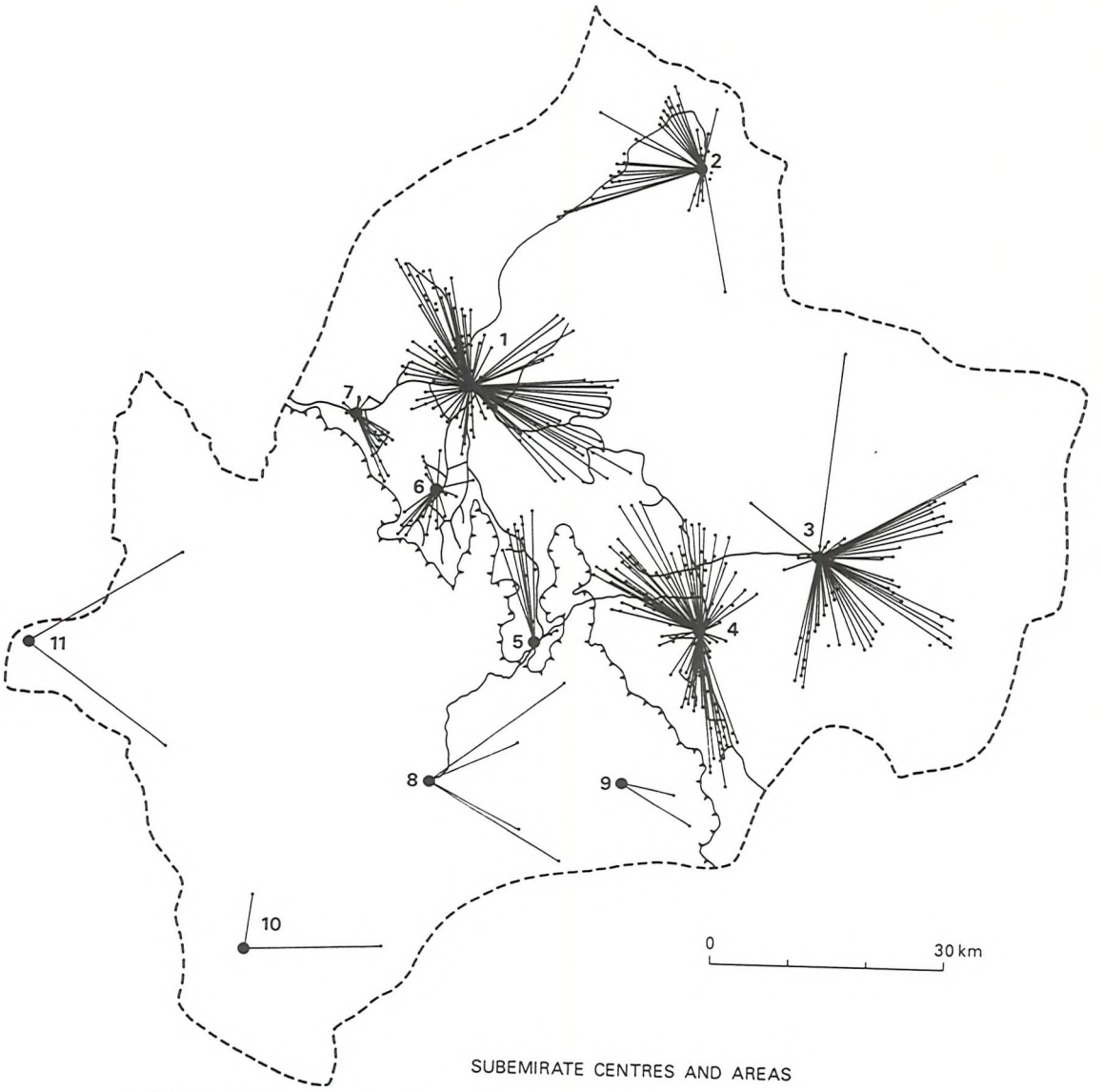


Figure 13.1 Proposed future development of subemirate centres and catchment areas for the subregion of Sarat Abidah

should be divided into seven and the Tihama into four subemirate areas. The subemirate centre of each unit should also act as the main service centre. In fact five of the proposed areas in the mountains already exist but it is suggested that the one subemirate area in the Tihama should be replaced by four. It is also suggested that the two new areas in the mountains should be established around Alasran and Sabat Bani Bishr, two area currently in the Sarat Abidah subemirate area which are central to well populated districts. It is also suggested that the northern part of the mountain area comprising the Jwof Almamer villages, which is administered at present from Sarat Abidah subemirate should be transferred to Alarquayn subemirate, to which they are equally accessible. In the same way it is suggested that the subemirate of Aljawwah should take in some villages (Alzawiyh, Zuhrah and Alardaiyn villages) which are currently administered from Sarat Abidah subemirate. All of this has the effect of reducing the administrative area of Sarat Abidah town from which too many villages were demanding services for adequate provision. These changes would be unlikely to limit the continued and clear dominance of Sarat Abidah town as the regional service centre.

The size of the Tihama area within the subregion means that the current subemirate centre at Alfarashah cannot admininster the whole range of nomadic communities without a better communications network. It will be many years before the Tihama has an extensive system of paved roads. It is therefore suggested that three new subemirate centres should be established at Almoftah, Wadi Alhayah and Radwm to better serve these scattered communities. It would also be sensible to transfer the two villages of Alghwal and Tyh Mastwrh in the eastern part of the Tihama, which are presently

administered from Alharajah, to Almoftah centre. There is no road between these two Tihama villages and Alharajah which is across the escarpment in the mountains. Similarly the villages of Alashah, Adiyn and Alnaiyr should be taken from Aljawwah and put in the catchment of Alfarashah centre to which they are more accessible.

The research has shown that the existing patterns of settlements and services in the subregion are not uniform, due mainly to the topographical and socio-economic variations especially between the mountains and the Tihama area. Since most villages in the subregion are too small to maintain their own services, like a school or health centre, it is important to group villages in order to share a number of services. It is also important to take into account the needs of isolated villages and the nomadic communities which are difficult to place into groups. The lack of adequate communication between the Tihama and the mountains also suggests that village groups should not cut across the escarpment.

Chapter nine has already shown that the facilities and services which have grown up in this subregion have created a series of service centres in the form of a crude central place hierarchy. Some villages were originally tribal centres, had periodic markets, or were simply large villages which have, over recent years, required additional services as a result of being subemirate centres. But in selecting settlements for these new functions, no guidelines seem to have been followed.

With something of a hierarchy of service centres already in existence, it is necessary for the writer to build on this and he has suggested that most of the current centres should retain their status and in some cases should become more important. His selection of these centres is based on

extensive field survey and observation where several criteria were considered. These included:

1) The existing public and private services in the village.
2) Its existing population and its potential growth.
3) The historical significance of the village especially in terms of a traditional centre or weekly market which would cause the local community to see it as a natural centre.
4) The village's location and accessibility in relation to other villages which will depend on it for services.
5) The existing road network and its possible upgrading.
6) Topography and site characteristics to enable village expansion.

On this basis, it is proposed that 47 villages in the mountains should be selected as service centres and fourteen villages in the Tihama area. The hierarchy in the mountains would operate at four levels and that in the Tihama at three. Fig. 13.2 shows the distribution of the selected village service centres of different grades in the two topographic zones. The proposed village service centres in the mountain areas would consist of the following:

1) One subregional centre (level A). This is the small town of Sarat Abidah whose population, centre of commmunications, government and retail services clearly already identify it as the subregional centre. Its current functions and excellent location suggest that it has much potential for further growth and it should be confirmed in turn as the subregional centre by the addition of other services. A hospital is already due to open but other functions could include further education and government

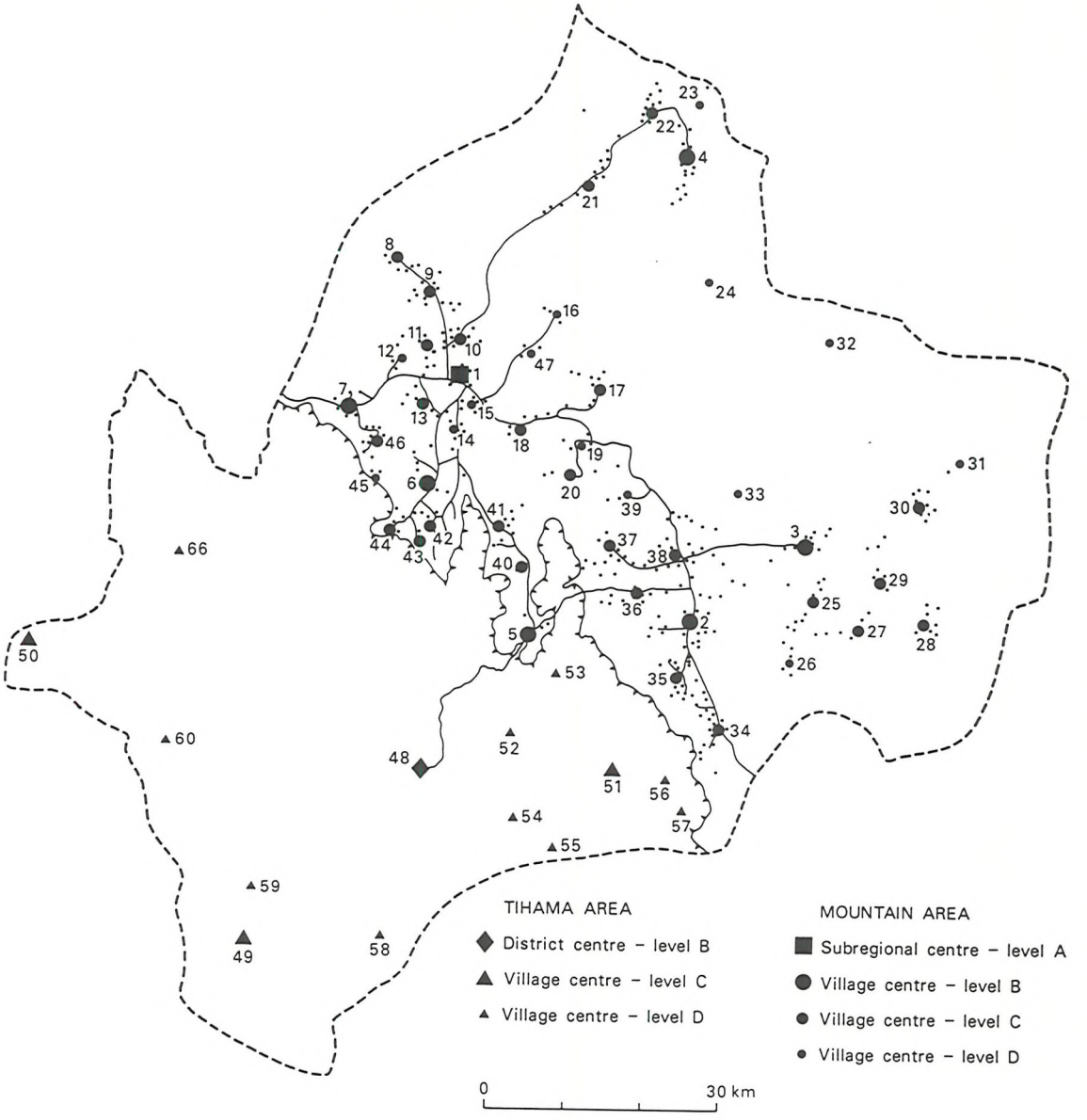


Figure 13.2 Proposed Structure Plan of village centres in the subregion of Sarat Abidah

administration.

2) Central villages (level B). Six villages in the mountain areas can be identified to provide a full range of less specialized services, such as local government (subemirate) administration, secondary schools and a high grade health centre also to serve surrounding lower grade villages. These villages would also contain lesser services like primary schools and some shops. These six central villages were identified in chapter nine as already fulfilling these roles as subemirate centres with the exception of Alasran and Sabat Bani Bishr.

3) Central villages (level C). 26 villages have been identified to provide a number of basic services to villages around them like elementary and intermediate schools for boys and girls, a post office and health centre. Again most of these were identified in chapter nine as having these services already.

4) Central villages (level D). Fourteen villages were identified as being able to offer some basic services to themselves and surrounding villages. Villages in this category would not be expected to have many more services than they can support by their own populations.

In the Tihama area the proposal for the hierarchy is different. Settlements are widely dispersed and isolated from each other by parallel mountain ridges. Few yet have services and only Alfarashah provides some for surrounding communities. Here it is suggested that all of the existing villages should become central villages to offer basic services to their communities and to the surrounding nomadic population. Alfarashah village would become a district centre (level B), with services equivalent to a subemirate

centre in the mountains, because it already serves that function for a considerable population around it. Because of the isolation of the Tihama the area might gain additional facilities like a small hospital which could best be sited at Alfarashah. Three other villages in the Tihama were selected to provide less specialized services for a number of surrounding nomadic communities like level C villages in the mountains. The other ten villages were classified as village centres (level D) which would provide daily needs such as primary schools for boys and girls and basic health care for their own populations.

The proposed hierarchy reflects the current level and pattern of service provision across the subregion, but clearly any such system must allow for growth in the level of provision and likely demand which might occur in the future. All services and facilities except commercial services are provided by the government and it is assumed that this will remain the future pattern. Under the present framework public facilities and services are mainly grouped into four categories: a) administrative and security services, such as public administration, police and fire protection and judicial services; b) health and social services, such as hospitals, primary health care services, social security and insurance, religious services, and cultural, information and youth welfare services; c) educational facilities, such as higher education services, primary, intermediate and secondary schools, and technical and vocational education; d) infrastructural facilities, such as roads, municipal services and facilities, telecommunication services, and electricity.

One can assume that the government will continue to aim to provide communities with these facilities and services according to needs and ability to support them. Table 13.1

Table: 13.1

Proposed public facilities and services development by different levels of village service centres in the Subregion of Sarat Abidah.

Types of Facilities and Service	Mountain Area				Tihama Area			
	A	B	C	D	B	C	D	
A- Administrative and Security services								
Subregional Emirate	x							
Subemirate (Grade B)		x			x			
Subemirate (Grade C)						x		
Police Headquarters	x							
Police Station		x			x	x		
Traffic Police	x							
Fire Station	x	x			x			
Prison	x	x			x	x		
Principal Court	x							
Court		x			x	x		
Educational Office (Boy)	x							
Educational Office (Girl)	x							
Civilian Affairs Office	x							
Municipal and Rural Affairs Department	x							
Health Affairs Office	x							
Labor and Social Affairs Office	x							
Commerce Affairs Office	x							
B- Health and Social Services								
General Hospital	x							
Small Hospital (30 Beds)					x			
P.H.C.C. (Grade 4)	x	x			x			
P.H.C.C. (Grade 3)						x		
P.H.C.C. (Grade 2)			x					
P.H.C.C. (Grade 1)				x			x	
Red Crescent Centre	x				x			
Bilharzia Station	x				x			
Malaria Station					x			
Social Security Office	x	x			x			
Social Insurance Office	x	x			x			
Sports Centre	x	x			x			
Public Square	x	x			x			
Sport Club	x	x			x			
Central Mosque	x	x	x		x	x		
Eid Prayer Site	x	x	x	x	x	x	x	
Library	x							
Community Development Centre	x	x			x			

Table: 13.1 (Continued)

Types of Facilities and Service	Mountain Area				Tihama Area		
	A	B	C	D	B	C	D
C- Educational Facilities							
Junior College (Boys)	x						
Junior College (Girls)	x						
Vocational Training Institute	x						
Secondary School (Boys)	x	x			x		
Secondary School (Girls)	x	x			x		
Intermed. School (Boys)	x	x	x		x	x	
Intermed. School (Girls)	x	x	x		x	x	
Primary School (Boys)	x	x	x	x	x	x	x
Primary School (Girls)	x	x	x	x	x	x	x
Kindergarten	x	x			x		
Adult education	x	x	x	x	x	x	x
D- Infrastructural Facil.							
Office of R.E.D.F.	x						
Office of A.B.	x						
Agriculture and Water Department	x				x		
Small Industrial Town	x						
Central Post Office	x				x		
Post Office		x	x			x	
Municipality	x						
Village Cluster		x			x	x	
Telephone Service	x	x			x		
Telegraph Service	x	x			x	x	
Telex Service	x						
Road Team	x				x		
Small Airport	x						
Office of P.T.C.	x						
Electric Power Office	x	x			x	x	
TOTAL	50	27	9	5	33	16	5

Abbreviation: P.H.C.C.: Primary Health Care Centre

R.E.D.F.: Real Estate Development Fund

A.B. : Agricultural Bank

P.T.C. : Public Transport Company

lists all 50 public facilities and services that should ultimately be provided in the proposed village service centres according to the four categories. It can be seen that Sarat Abidah as the subregional centre would be provided with all 50 of the listed functions. Many of these are high order services which will further confirm the nodal position of Sarat Abidah town as the subregional centre.

Alfarashah in the Tihama would be developed as the second largest service centre and the centre for the Tihama, with at least 33 public services. This is not because Alfarashah is a rival in size to Sarat Abidah town but because it is the centre in the Tihama and the area's continuing isolation means it will need various higher order services which could not be met by Sarat Abidah. These could include a small hospital, a central post office and a local road maintenance team. Most of the other services found in Alfarashah would also be found in the level B central villages in the mountains. These level B villages would have at least 27 public services including village cluster administration, telephone service, sports centre, secondary school and high grade health centre.

Because central villages in the Tihama need to service more extensive areas than level C villages in the mountains they need to have more facilities, at least sixteen, compared with level C villages in the mountains which will have at least nine public services each. But the exact number and type of services in each centre would depend on level of demand at the time. Level D village centres in the mountains and Tihama would have at least five public services each including primary schools for both sexes and a grade one health centre.

It is not possible to determine the number and type of commercial services that should be found in each village

service centre at each level. These services are in the hands of the private sector who are able to determine if there is a local demand for a particular service. At present it is clear that the existing retail services in the subregion are highly concentrated in the two centres of Sarat Abidah town and Alharajah which have about 85 percent of all outlets. But important weekly markets also operate at Alfarshah in the Tihama and in other central villages and nomadic centres and these are likely to continue to thrive and may be joined by more retail outlets as the nomads realize the benefits of fixed store trading. The experience of the recent rapid growth of retail outlets in Sarat Abidah and Alharajah suggest that by concentrating more public facilities and services in these places, commercial services and other enterprises will in turn be attracted and the same could happened to some extent in the other B class centres.

The number of villages and inhabitants expected to be served by each level of the service centre hierarchy is shown in Table 13.2. It can be seen that there are large differences in the size of proposed village centres and the number of villages they serve and the population of their catchments. The largest area is that around Sarat Abidah subemirate with a total settled population of about 29,688 living in 106 villages of various sizes. But this is in fact a smaller population and catchment area than exists at present because it is suggested that some villages should be taken into new catchment areas. Fourteen villages in the Sarat Abidah area would also be key villages, eight of them at grade C and six at grade D level. While this proposal makes Sarat Abidah local catchment a little smaller, in effect what is proposed here is some strengthing of Sarat Abidah town's present role as the subregional centre and the only municipality in the subregion.

Table: 13.2

Distribution of villages and population by proposed subemirate areas and village centres in the Subregion of Sarat Abidah, 1987.

Subemirate Area	Code in Fig. 13.2	Name of service centre	Level of serv. cent.	Central village pop.	Total vill. served	Total served pop.
Sarat Abidah	1	Abidah	A	4,500	5	5,269
	8	Alwahabah	C	930	6	3,390
	9	Aljldah	C	411	14	3,089
	10	Alaiys	C	470	11	3,194
	11	Aldkhaysh	C	352	8	2,149
	18	Albasam	C	412	7	1,245
	17	A. Aziyzah	C	250	9	1,421
	20	Almnadiyh	C	285	5	1,157
	13	Aljzah	C	460	8	2,108
	12	Alqwsha	D	185	5	860
	14	Almsiyad	D	180	7	1,280
	15	Alabs	D	200	8	1,856
	16	Alkharshan	D	220	4	850
	47	Alsahn	D	180	4	775
	19	Alwasad	D	190	5	1,045
Total	-	-	-	-	106	29,688
Alharajah	2	Alharajah	B	530	20	2,662
	34	Alawran	C	320	18	3,282
	35	Alqrwat	C	280	23	3,315
	36	Almaraghah	C	190	11	1,600
	37	Almanqah	C	460	16	2,854
	38	Alkolah	C	450	20	2,605
	39	Aldbah	D	180	3	680
Total	-	-	-	-	111	16,998
Alfayed	3	Alfayed	B	650	12	3,249
	25	Alsladiyn	C	350	11	1,310
	27	Alhijali	C	560	7	1,685
	28	Alrofghah	C	580	8	2,315
	29	Almajma	C	470	7	1,510
	30	Aljafiyl	C	520	12	1,668
	26	Alarq	D	180	6	920
	31	Hmran	D	185	2	320
	33	B. Alqasab	D	120	1	120
	32	Alkhnaqah	D	145	1	145
Total	-	-	-	-	67	13,242
Alarquayn	4	Alarquayn	B	580	18	2,923
	21	J. Almamer	C	470	14	3,076
	22	Almnadiyh	C	360	11	1,486
	23	Alhariyqah	D	230	2	420
	24	Bshran	D	160	1	160
Total	-	-	-	-	47	8,065

Table: 13.2 (Continued)

Subemirate Area	Code in Fig. 13.2	Name of service centre	Leve of serv. cent.	Central village pop.	Total vill. served	Total served pop.
Aljawwah	5	Aljawwah	B	1,300	4	2,251
	40	Zuhrah	C	720	2	1,250
	41	Alzawiyh	C	300	9	2,060
Total	-	-	-	-	15	5,561
Sabat Bani Bishr	6	S.B. Bishr	B	380	9	1,959
	42	Alabidiyah	C	650	7	2,548
	43	Alkhalf	C	850	4	1,914
	44	Alarabah	C	450	5	1,435
Total	-	-	-	-	25	7,856
Alasran	7	Alasran	B	1,050	7	2,946
	46	Othman	C	580	13	2,947
	45	Hmalh	D	230	3	560
Total	-	-	-	-	23	6,453
Alfarashah	48	Alfarashah	B	1,600	1	1,600
	52	Alaiynah	D	180	1	180
	53	Alashah	D	210	1	210
	54	Adiyn	D	360	1	360
	55	Alnaiyr	D	450	1	450
Total	-	-	-	-	5	2,800
Almoftah	51	Almoftah	C	700	1	700
	56	Alghwal	D	300	1	300
	57	T. Mastwrh	D	300	1	170
Total	-	-	-	-	3	1,170
Wadi Alhayah	49	W. Alhayah	C	750	1	750
	58	Alhasan	D	260	1	260
	59	Anqar	D	400	1	400
Total	-	-	-	-	3	1,410
Radwm	50	Radwm	C	700	1	700
	60	Almatiyh	D	450	1	450
	61	Althafrah	D	570	1	570
Total	-	-	-	-	3	1,720

Note: The total population figure does no include the nomadic population. Population based on field survey and the 1983 estimate by the Asir Emirate.

Alharajah would, as now, be central to the second largest subemirate area with a total population of about 13,242 living in 111 villages. Alharajah centre is considered the second most important service centre in the mountains and has therefore already gained municipality status as a village cluster centre. Here it is proposed that five villages in the cluster become grade C service centres. Aldbah village is considered a key village to act as a level D centre for three small villages which are too remote to be served from other centres.

In Alfayed and Alarquayn areas a number of small villages (Hmran, Biyr Alqasab and Alkhanaqah in Alfayed, and Bshran and Alhariygah in Alarquayn) present servicing problems because of their great remoteness from the main centres and the small sizes of their populations. They are here proposed as grade D service centres because they already possess primary schools for boys and they are expected to serve large nomadic communities which surround them.

As was stated earlier Sabat Bani Bishr and Alasran have been selected to act as major service centres (level B) even though they are not at present subemirate centres. Sabat Bani Bishr would become the centre for 25 villages with a total population of about 7,856. Sabat Bani Bishr is quite small compared with other villages in its area, such as Alabidiyah and Alkhalf. However, from fieldwork observations and interviews with community leaders its enhance status would seems appropriate since it has already started to become a centre of local services, with a secondary school for boys, a high grade health centre and a number of shops. Local people chose to have these facilities sited there because it is a traditional centre. Similarly Alasran village is put forward as a B grade centre because of its

traditional importance its population size and existing services. It acts as the main service centre for 23 villages with a total population of about 6,453.

Aljawwah village on the edge of the escarpment would become a B grade service centre, because of its traditional significance, its population size and existing services already as a subemirate centre. It acts as the main service centre for fifteen villages with a total population of about 5,561. Two villages in its area would also be key villages of grade C level.

As indicated before in the Tihama area all of the existing settlements are proposed as service centres because there are so few of them and they already act as gathering points for the nomadic groups that wander between them. Because of the poorer accessibility here and the limited provision of services, every effort is necessary to get services to those places and it is not possible to envisage developing one village or area rather than another. Higher grade service centres are proposed at Alfarashah, Almoftah, Wadi Alhayah and Radwm. The low number of people listed in Table 13.2 as served by centres in the Tihama results from the fact that these figures do not include the nomadic population which make up the majority of Tihama inhabitants.

Even with the elaboration of the service centre hierarchy as proposed here, the great majority of the villages would still lack services, but fieldwork has demonstrated that improved communications can make central services available to most villages if distances to services are kept relatively small. So priority should be given to the further development of the road system as much as to the development of services in the identified villages, especially to connect cental villages to those villages they will serve. In some ways this is the first step in

confirming the existence of clusters of villages which has become the basis of municipal provision in rural areas.

Experience suggests that municipal services are given a lower order of priority than health, education and similar services, but some municipal services such as the provision of rural roads should be considered as important as education and health services. In this respect the preparation of a master plan for the main centres of Sarat Abidah, Alharajah, Alfayed, Alarquayn, Aljawwah, Sabat Bani Bishr, Alasran, Alfarashah, Almoftah, Wadi Alhayah and Radwm and their areas should be considered as important guides for the proper development of those areas. In turn these master plans could help with the more successful introduction of municipal projects in the subregion.

A subregional coordinating committee should be established representing different government offices, to coordinate and integrate various infrastructure projects and priorities for different areas within the subregion. This would take in the provision of local roads, power supplies and other subregional needs. There is, for example, an urgent need for the connection of villages to the power grid network and the provision of better telecommunications.

13.4 LESSONS FROM STUDY EXPERIENCE

A number of more general lessons come from this study which also help to explain the limited progress made in effective service provision. These mainly concern lack of data and lack of coordination in government that makes planning difficult at the regional level.

There is no doubt that there is an increasing awareness among the government agencies in Saudi Arabia of the need to develop and improve the geographical spread of essential

public services. It is also obvious that not only are there severe inequalities in the provision, and the application of some services has been more successful than others.

There could be several reasons for this and some of these have been touched on, but the writer found general agreement amongst officials he interviewed that effective planning for national and regional development requires a better level of data on which to make planning decisions and by which to guide service provision. In Saudi Arabia, as in many developing countries, the paucity of even the most basic types of data has proved a major obstacle to more effective planning and provision of essential public services at the regional level. With so little up to date information on total population, age, sex and socio-economic conditions, planners are forced to depend on crude estimations or small samples of data. For example, some demographic estimates for Asir by various private consultancy companies were drawn from a sample of 5 percent of the population only in the main urban centres. These have led to widely differing estimates and considerable sources of errors. Similarly four estimations over the last few years of the number of villages in the region have ranged from about 2,000 to 4,000 places.

The most recent national census taken in Saudi Arabia was taken as long ago as 1974. There is even some doubt about its accuracy. Because it was the first and only census conducted in Saudi Arabia little comparison was possible with other counts to assess population and settlement trends. It is clear that there have been major changes in the socio-economic structure of the Kingdom's population in the last fifteen years but there has been no recent census to record them. There is an urgent need to carry out a new

national census of population and settlements as a first requirement for the preparation of more accurate future development plans.

Efforts have been made in recent years to create proper administrative areas and to provide data for the proper management of facilities in those areas, but data made available to researchers is very general and usually presented only at the national level, so that the data cannot readily be used to analyse the performance of various government ministries at the regional level. Because different government agencies use different administrative areas it is also difficult to compare the performance of different sectors at the regional level. For example the six educational districts used by the Ministry of Education in Asir contrasts with the eighteen used by the General Presidency For Girls' Education.

But it is not just a problem of shortage of suitable data on which to base development decisions and to compare government performance at the regional level. There is often a need for better cooperation and coordination between different government ministries. Often a development in a district cannot proceed until another part of the infrastructure has been provided. There is seldom much point, for example, in the Education ministry providing a school in a particular area until the ministry responsible for communications has agreed to develop the road network to allow children to be bused in from surrounding villages. There was no point in the Alfarashah area in the Tihama being provided with schools, clinics and other services until the Ministry of Transport opened a road in 1976. But there appears to be no mechanism by which the educational authorities can request a road to be put in to an area to allow a school to be opened.

Often this needs local initiative but the centralization of decision-making power in the hands of a central government ministry often limits the regional initiatives to promote development. This is especially so in rural areas. Each ministry has a branch office responsible for developement in its region but these regional branches have no real decision-making power. For instance, in Asir the branch office of the Health Ministry cannot alone decide to open a new primary health care centre. It can only pass on a request to the central ministry for such a development within the regional budget. This request may then take months to pass through the central planning department of the Ministry of Health in Riyadh before approval can be obtained, when the regional office can begin to take on the planning for the new health centre. At a time when facilities are urgently needed greater decentralization down the administrative system to the regional office might speed development.

While most government agencies are involved in some way in regional development and planning, the two most directly involved at the regional scale are the Ministry of Planning (MOP) and the Ministry of Municipal and Rural Affairs (MOMRA). The MOP is more concerned with socio-economic development and the preparation of national development plans while the MOMRA has the overall responsibility for improving the physical facilities and services at the regional level. It is clear from this study that there is insufficient coordination between these authorities in Asir in preparing and carrying out their regional planning polices. With duplication of activities waste occurs. There is an urgent need for the establishment of a development committee at the regional level to coordinate and guide the regional development plans of various authorities in the

region. The committee should include representatives not only of those departments but of all ministry branches and the private sector in the region.

Because each region's needs are different only a regional body can best plan how to meet those needs. One of those needs could be a set of criteria by which it is decided if a community should receive a particular public facility. Government policy statements and interviews with government officials demonstrate that no clear policy exists at present for deciding when and where a new school, health centre or any other service should be established. Where guidelines exist they are frequently ignored. As a result some communities can further their claim for any type of service by making more requisitions, manipulating the evidence of their needs, or by having more political influence. It could be argued that the most remote parts of Asir region should expect to obtain the smallest share of infrastructure development, because their remoteness and small population often means that the cost of infrastructure improvements outwight the benefits. But one suspects that one reason the remote areasare so fully ignored is because they have the least political influence to get the funds allocated to their area.

Clearly all decisions on funding priorities will eventually come down to personal judgement of the best way to spend limited amounts of money, but at least some basic criteria on meeting needs should be built in to the allocation procedure. At the very least simple criteria such as a school should be provided within five km of every child, so long as the local catchment is sufficient to support a school, would provide the basis for sounder allocation of resources. As development continues such guidelines could become more important.

The situation in a developing region, like Asir, is one where government is not able to meet fully all the basic needs of the population. A good level of services have been provided in many areas but much more is needed. However, the era of ambitious development with few financial constraints seems to be over, at least for the time being with the fall in the oil income. Therefore the next few decisions on the location of facilities could be crucial ones. As Rushton and Fisher (1979) have pointed out:

> "In lagging regions of developing nations, where rural spatial structures are only now emerging to support service delivery systems and other modernization programmes, location decisions made in the immediate future will be vital for the long run. Crucial location decisions will be made in such regions with or without serious locational analysis and, once made, many will be difficult if not impossible to change if and when mistakes are recognized." (p. 96).

As the Kingdom moves into a period of crucial decisions on the allocation of public facilities at a time of financial constraint, there is an urgent need for lessons to be learnt from past experience to ensure that resources are more effectively allocated.

13.5 FURTHER RESEARCH AND FOLLOW-UP STUDIES

Having completed this research, it is hoped that the results obtained, and the recommendations made for the study area may assist government agencies in improving the provision of public services there and may also point to measures that could be adopted elsewhere in the Kingdom. But the author also recognizes that as the first piece of work of this type conducted in Asir, there are gaps in it which offer other research opportunities for future studies.

First, it has been made clear throughout this study that there is a particular lack of studies about the spatial

distribution of settlement and population in Asir and without these one cannot judge how well public services are used and meeting needs. Empirical studies, therefore, are still needed in other parts of Asir, as well as other parts of Saudi Arabia, to examine the distribution and characteristics of settlements, of population, and their use of services.

Study of the use of services would lead into examination of preferences of public service users and their socio-economic and demographic characteristics. Such study would be useful for better decision making on the allocation of new facilities.

Among other further studies is the question of the cost and efficiency in the provision of different patterns of services in such extensive rural areas like Asir, to examine the relationship between the number and size of service outlets, the cost of providing few large facilities and the investment in a large number of small outlets, and how well each pattern is used.

It has been made clear that the road network has a significant influence on the utilization of services. It is therefore important that a further study on car ownership and the impact of the use of vehicles and the road system on the utilization of public services deserves much more attention than has been given in this thesis.

It has been shown that public services in Asir, as well as in the Kingdom, are provided by several government agencies and that there is very limited coordination between them. This multiplicity of delivery systems creates locational problems and overlap between these agencies. It would be useful to examine the boundaries adopted for various ministry areas and to suggest an integrated boundary system for planning and administrative units. There is scope

for studies of the impact of the overlap of services and service areas to see how different government policies can be improved for more effective planning and development.

In short there is still a need for empirical studies to examine the economic efficiency of public service provision in various parts of the country as the Kingdom moves towards a more mature situation of service provision and financial constraints which will slow the further expansion of those services.

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APPENDIX A

School Headmasters' and Headmistresses' Interview

1 School name: .....

2 Type of school:

Elementary boys : .....

" girls: .....

Intermediate boys : .....

" girls: .....

Secondary boys : .....

" girls: .....

Teacher T. boys : .....

" girls: .....

3 Location: .....

4 Establishment year: .....

5 Number of teachers: .....

6 Number of other staff: .....

7 Type of school building:

Government-own building: .....

Rented building: .....

8 Name of villages the school serves:

No.	Village name	No. of students	Distance	Transport
1	.....	.....	.....	.....
2	.....	.....	.....	.....
3	.....	.....	.....	.....
4	.....	.....	.....	.....
5	.....	.....	.....	.....
6	.....	.....	.....	.....
7	.....	.....	.....	.....
8	.....	.....	.....	.....
9	.....	.....	.....	.....
10	.....	.....	.....	.....
11	.....	.....	.....	.....
12	.....	.....	.....	.....
13	.....	.....	.....	.....
14	.....	.....	.....	.....
15	.....	.....	.....	.....
16	.....	.....	.....	.....
17	.....	.....	.....	.....
18	.....	.....	.....	.....
19	.....	.....	.....	.....
20	.....	.....	.....	.....

APPENDIX B

Secondary and Teacher Training Students' Questionnaire

1 School name: .....

2 Location: .....

3 Which village or town do you live in?

Village name: .....
Town " : .....

4 How far is your village from this school?

Less than 1 km ( )
From 1 - 5 km ( )
" 6 - 10 km ( )
" 11 - 15 km ( )
" 16 - 20 km ( )
" 21 - 30 km ( )
" 31 - 40 km ( )
" 41 - 50 km ( )
More than 50 km ( )

5 Do you live in another place to be near to this school?
Yes ( )
No ( )

6 If "Yes" which village or town?

Village name:.....
Town name :.....
Distance :.....

7 What type of transport do you use to come to school?

Self drive car ( )
Friend's car ( )
Taxi ( )
School bus ( )
On foot ( )
Other ( )

8 Which type of road do you use?

Asphalt road ( )
Dust road ( )
Asphalt/Dust road ( )

9 How many students from you village study at this school?

Number of students ( )

10 How many students aged 15-18 years old from your village do not attend secondary school?

Number of students ( )

APPENDIX C

Interview with Health Centre Physicians

1 Health centre name: .....

2 Location: .....

3 Grade of the health centre:

Grade 4 ( )
Grade 3 ( )
Grade 2 ( )
Grade 1 ( )

4 Type of Building:

Government-own building ( )
Rented building ( )

5 Establishment year: .....

6 Number of physicians ( )

7 Number of nurses ( )

8 Number of Pharmacy assistants ( )

9 Number of Technician assistants ( )

10 Number of administrative staff ( )

11 Number of Health inspectors ( )

12 Number of servants ( )

13 Number of drivers ( )

14 Number of other workers ( )

15 Number of beds ( )

16 Number of ambulances ( )

17 Opening time of the health centre:

Morning: .....
Evening: .....

18 The name of villages served by the health centre:

No.	Village name	Distance
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
5	.....	.....
7	.....	.....
8	.....	.....
9	.....	.....
10	.....	.....

APPENDIX D

Health Centres Users' Questionnaire

Name of the health centre: .....

Location: .....

1 Which village or town do you live in?

Village name: .....

Town " : .....

2 How far is your village from this health centre?

Less than 1 km ( )

From 1 - 5 km ( )

" 6 - 10 km ( )

" 11 - 15 km ( )

" 16 - 20 km ( )

" 21 - 30 km ( )

More than 30 km ( )

3 Which type of transport have you used to come here?

Family car ( )

Friend's car ( )

Taxi ( )

Bus ( )

On foot ( )

Other (explain) .....

4 Which type of road have you used to come here?

Asphalt road ( )

Dust road ( )

Asphalt/Dust road ( )

5 How many visits have you made to this health centre in the last year?

Number of visits ( )

APPENDIX E

Storekeepers' Questionnaire

Store address: .....

1 In which year did you open this shop? .....

2 Why did you choose to open it here? .....

.....

.....

3 Which village or town do you live in? .....

4 Have you moved here from another village or town?

Yes
No
If "No", go to q. 8

5 If "Yes", which village or town? .....

6 Did you come here to open the shop? Yes No

If no, specify other reasons .....

.....

.....

7 Why did you not open this shop in your own village?

.....

8 Have you got any other shop/business? Yes No

If "No" go to q. 10

9 If "Yes", please list them

Location	Kind of business	Establishment Year
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

10 Do you plan to expand this shop? Yes No

11 Do you plan to establish other businesses? Yes No

If "No" go to q. 14

12 If "Yes" please state where and what kind of business in order of preference.

Location	Kind of business
.....	.....
.....	.....
.....	.....

13 For your first choice in q 12, why would you like to expand there?

....

....

....

Give the order of importance of these reasons

14 Can you estimate what proportion of your customers come from this town/village?

.....

15 Can you name the most distant villages some of your customers come from?

....

....

....

....

16 From which towns/villages do you obtain your goods?

Goods	Location
.....	.....
.....	.....
.....	.....

17 Can you estimate the proportion of goods you purchase in each place?

Location	Proportion
.....	.....
.....	.....
.....	.....
.....	.....