

KINGDOM OF SAUDI ARABIA
MINISTRY OF MUNICIPAL & RURAL AFFAIRS
DEPUTY MINISTRY FOR TOWN PLANNING

Project No. 206
ABHA ACTION MASTER PLANS

TECHNICAL REPORT NO. 4
EVALUATION OF EXISTING MASTER PLAN

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SUMMARY

This report encompasses a detailed examination and evaluation of the previous Master Plans and other related studies in order to determine the future course of action to be undertaken for updating, modifying and changing the existing Master Plans and Action Area Plans.

The report contains, in addition to the Introduction, four chapters:

- Present Situation and Development Trends.
- Evaluation of Master Plan Studies.
- Evaluation of Other Documents.
- Conclusion.

Abha Metropolitan Area is located in the central part of Asir Province and includes the three Municipalities of Abha, Khamis Mushayt and Ahad Rafidah. Abha is the administrative centre for the Southern Region and Khamis Mushayt is the main commercial centre of the Region.

The area has a very good climate. The annual mean precipitation rate in the area varies from 550 mm in the Sawdah Mountains to less than 200 mm in the north-east. The mean annual temperature in Abha is 16°.9C.

The area has a population of about 150,000 inhabitants (SPS survey Shaban 1398 (June-July 1978)). The urban areas of Abha, Khamis Mushayt and Ahad Rafidah have 38,000, 55,000 and 2,700 inhabitants respectively. The rural population is 55,000 inhabitants. Non-Saudi population is about 20,000 persons.

The Master Plans Studies evaluated in the Report have been prepared by Kenzo Tange URTEC and were presented in final reports in 1398(1978). These reports include a Regional Study entitled the Physical Plan Report, Southern Region, and Master Plan reports for Abha and Khamis Mushayt.

For Abha and Khamis Mushayt Master Plans were also prepared by the former Town Planning Office of Abha in 1394 (1974). However, no Master Plan was prepared for Ahad Rafidah.

Physical Plan Report, Southern Region

The physical plan report for the Southern Region deals with development objectives and policies for the whole region and also with a development plan. An appendix on Community Planning Standards is attached to the Report.

The study emphasises that the region should concentrate on the development of:

- (a) agriculture
- (b) domestic tourism
- (c) industry(where feasible)
- (d) mineral extraction.

The development of agriculture is strongly dependent on the availability of water. In the Abha Metropolitan Area the water resources are limited and no further development can take place without the import of water. A special study on agriculture has been carried out by SPS experts.

There is a great potential for development of domestic tourism in the Abha area and different studies have been carried out in this respect.

Manufacturing industry which is considered suitable for the Abha Metropolitan Area is only that which is related to service industry and building construction.

Some deposits of minerals are mentioned in the report. They are all located at distances of about 100 to 150 kilometres from Abha and Khamis Mushayt. No data on quality and quantity of these resources are available.

The commerce and service industry is foreseen to have a high development potential in the Metropolitan Area as it will serve the whole Southern Region.

The population projection made for the whole region shows an increase in population from about 1,000,000 inhabitants in 1395(1975) to between 1.5 and 1.8 million in 1415(1995). The Asir sub-region is expected to grow from about 400,000 inhabitants in 1395(1975) to between 600,000 and 700,000 in 1415(1995). The projections made are in need of revision especially where they refer to the distribution of people between rural and urban areas.

Regarding manpower and social development the importance of education on all levels is stressed. Abha Metropolitan Area has a key geographical location for higher education and is thus the obvious place for locating higher education intended for the whole Southern Region.

In the Development Plan for the region Agriculture, Live-stock and Fishing, Industry, Commerce and Service, and Social Development are mentioned.

The total arable land in the region is estimated to be 285,000ha in 1415(1995) which is the same as in 1395(1975). It is estimated that the number of agricultural workers will increase from 117,000 in 1395(1975) to 148,000 in 1415(1995). A decrease of workers is more likely as a result of modernization of agriculture. The development of the agriculture in the area has a very strong influence on the economy, future population and migration. In the

agricultural studies in progress for Abha Metropolitan Area made by SPS the future number of agricultural workers will be estimated and necessary revisions will be made.

The national policies for industrial development are mentioned. These policies have to be studied in the Action Master Plan Project taking into account the local conditions in the Metropolitan Area.

In the commercial and service development plan the total commercial and service floor areas and number of employees in Abha and Khamis Mushayt are given. The increase in floor area is considerably lower than can be expected for towns growing three times and with strongly increased per capita income. The figures given by Kenzo Tange URTEC are in need of revision which will be done in the Action Master Plan Project.

In each of the final reports is included an appendix on community planning standards.

These standards deal with:

- Demographic and Density Frame for Standards.
- Planning Standards for different Facilities such as Educational, Recreational, Religious, Social and Cultural, Health, Commercial and Public Buildings.
- Planning Standards for Housing and Density and Road and Street Networks.

Finally a hypothetical example of land area distribution is presented based on the community planning standards.

This appendix is of great importance for the planning. Most of the data can be used directly in the planning process although some need revision. A detailed evaluation of the standards is presented in section 3.1.2 of this report.

Abha Master Plan Report

Abha Master Plan Report reviews information on the existing conditions, presents projections and a physical Master Plan which outlines the development for a planning period from 1395 to 1415 (1975 to 1995). The evaluation of the Master Plan is presented in accordance with the layout of the 11 chapters of the Report.

It is expected that the primary functions of the city will be Government Administration, Tourism and Recreation, Educational and Cultural Activities.

The Kenzo Tange Report deals with Population and Housing, Employment, Civic, Cultural and Commercial Centres, Recreation and Conservation, Primary Communication and Transport, Public Utilities, Land Use and Administration and Management.

Kenzo Tange has estimated the population in 1395 (1975) to be 22,100 inhabitants. The National Census in 1394 (1974) gives 30,200 inhabitants and the SPS survey in 1398 (1978) 38,000 inhabitants. Kenzo Tange has used the National Census figures in forecasting the future population which is estimated to be between 78,600 and 104,400 inhabitants in 1415 (1995).

Abha area is proposed to be divided into three communities of about 30,000 inhabitants and 24 neighbourhood units each with 2,300 to 6,000 inhabitants in 1415 (1995).

The need for a division of the town area into the proposed neighbourhood units is not discussed. The housing need for each neighbourhood unit has been calculated on the basis that the household size will decrease from 4.7 in 1400 (1980) to 4.3 in 1415 (1995). In 1398 (1978) the household size was 6.2 according to the SPS survey. There are no indications that such a large decrease is expected. All these calculations are thus in need of revision.

In the Kenzo Tange Report detailed calculations of the need for educational, public, industrial, cultural and commercial facilities are presented. These calculations have to be updated and revised in the preparation of the Master Directive Plan.

The transportation study presented in the report is in need of complete revision which is currently in progress in the Action Master Plan Projects.

The detailed studies concerning the different planning elements have been synthesized in a land use plan.

The land use plan shows principal land use, conservation areas, restricted development areas, main road network and public facilities.

The presentation of the land use plan is too schematic and a description of the concept behind the organization of all the different planning elements is missing.

The last chapter of the Abha Master Plan deals with the development along the main road between Abha and Khamis Mushayt.

Khamis Mushayt Master Plan Report

The Khamis Mushayt Master Plan Report has the same layout as the Abha Master Plan Report.

The population of the urbanized area of Khamis Mushayt was estimated by Kenzo Tange to be 29,300 in 1395(1975) and according to the National Census in 1394(1974) it was 31,930 inhabitants. The SPS survey in 1398(1978) shows 55,000 inhabitants. The projected population used by Kenzo Tange in the Master Plan is 39,500 for 1400 (1980), 51,600 for 1405(1985) and 88,300 for 1415(1995).

These figures are far too low as the population already exceeds the projected population of 1405(1985).

Most of the material presented in the Master Plan Report is based on these population figures with the result that revisions are needed in all parts of the report.

In section 3.3 of this report the different chapters of the Master Plan Report are nevertheless evaluated.

Evaluation of Other Reports

The main purpose of evaluating reports other than the Master Plan Report is to extract information and to make it available when performing the different planning tasks.

All together 14 reports are presented, some of which are summarized below.

Most of these reports have been used by Kenzo Tange URTEC as background material for their Master Plan Studies.

This refers especially to the Second Five Year Development Plan, which gives the main development goals for the Kingdom, and to studies related to this plan.

The Socio-Economic Development Plan for the South-West Region in Saudi Arabia presented in 1393(1973) provides useful background material, even if the situation has changed considerably since the report was written.

The Industrial Studies and Development Centre has presented a report on Industrial Opportunities in the Southern Region (Riyadh 1396/1976).

In the report recommendations are given on

- action to be taken to develop agriculture, and
- action for setting up an industrial estate at Khamis Mushayt.

The study recommends also that the government should undertake directly productive investments such as the establishment of industrial estates and specific industries.

The Ministry of Communication has, in 1395(1975), presented a report on the Tihama Descent Phase I. In this study the development of the Rural Road Network of the Southern Region is presented.

Three reports have been presented on tourism and recreation.

- Asir Kingdom Parks (1397/1977)
- Summer Resort in Sawdah (1395/1975)
- Town Recreation Park Projects at Abha (1395/1975).

The first report presents tourist projects to be established in the Asir National Park. These are now in the stage of being implemented.

The second report presents a proposal for a Summer Resort village to be established in the Sawdah mountain area.

The third report presents a proposal for a town recreation park including an amusement park to be located west of Abha dam.

The various studies form a valuable and necessary background to the preparation of the Master Directive, Execution and Action Area Plans within the Action Master Plan Project.

In general most of the objectives and goals stated in the different studies can be adopted directly into the Master Directive Plans. This refers also to the Community Standards presented by Kenzo Tange URTEC. Statistical information given in the studies has to be updated, however. In this respect new studies have been carried out within the Action Master Plan Project.

The Land Use Plans presented by Kenzo Tange to a large extent have to be revised.

The general layout of the Abha Master Plan is still valid but the road network, the commercial centre and the detailed development of the different areas have to be restudied.

For the preparation of Execution and Action Area Plans new detailed studies are needed as large numbers of new buildings have been constructed since the Master Plan Studies were carried out.

For Khamis Mushayt the Master Plan is already outdated as the population growth has been much faster than was projected in the Kenzo Tange URTEC Master Plan. A population of 150,000 inhabitants is expected in 1415(1995). Only 88,300 inhabitants was projected in the Master Plan.

Several new, large residential areas are thus needed compared with what is proposed in the Master Plan. The dimensions of the proposed road network are underestimated and several new main roads have to be proposed.

The Master Plan for Khamis Mushayt is therefore of little use for the future planning.

The Master Directive Plans to be prepared for the Metropolitan Area have, furthermore, to cover larger areas than were studied by Kenzo Tange.

Ahad Rafidah, which has no Master Plan at present, has to be included and also the main development areas between Abha, Khamis Mushayt and Ahad Rafidah.

The main conclusion is that the plans to be carried out within the Action Master Plan Project have to be based on new updated statistical data, new population projections, new programmes for the development of residential areas and public, commercial and industrial facilities, new traffic projections, updated information on current development and new updated maps. The existing studies will form guidelines in the planning process.

The land use plans presented by Kenzo Tange have to be restudied and new plans have to be prepared.

This report is the fourth of a series of reports prepared in accordance with the Agreement No. 206 between the Ministry of Municipal and Rural Affairs and Scan Plan-SWECO/Arch Center.

This report, entitled "Evaluation of Existing Master Plan", shall, according to the Agreement, encompass a detailed examination and evaluation of all work done in connection with the preparation of the previous Master Plans and Action Area Plans as well as a review of existing Regional Planning Studies, the Second Five Year Development Plan and other related studies. The Consultant, in consultation with the Counterparts and their experts, shall carry out the work in order to determine the future course of action to be undertaken for updating, modifying and changing the existing Master Plans and Action Area Plans.

1.1 PURPOSE OF THIS REPORT

The Action Master Plan Project includes three main planning tasks, namely the preparation of:

- (a) A Master Directive Plan for Abha, Khamis Mushayt and Ahad Rafidah covering the development during the Third, Fourth and Fifth National Development Plans.
- (b) Execution Plans for areas expected to be developed during the Third and Fourth National Development Plans, and

- (c) Action Area Plans for areas expected to be developed to the end of the Third Five Year Plan.

These planning tasks have to be based on:

- (i) National and regional policies, norms and objectives (Report No. 3).
- (ii) Master Plans for the areas and other studies relevant to the preparation of the different plans, and
- (iii) Existing conditions (Report No. 5).

The purpose of this report is to evaluate the existing Master Plans and other studies concerning the Abha Metropolitan Area in order to obtain relevant data for the preparation of the different plans.

The method used for evaluating the report has been to compare the statements made in the reports with general information collected during the planning work performed so far. This information is based on the results of surveys carried out by SPS and studies of current development trends and discussions with relevant authorities.

Information, policies, objectives and recommendations presented in the various studies already carried out for the Abha Metropolitan Area have also been compared. In many cases the evaluation indicated that the information and recommendations are unclear which has been regarded as a reason for the need for further studies. Where this is the case, and where further studies are needed in connection with the preparation of the Master Directive Plan, proposals for further studies are suggested in this report.

1.2 ORGANIZATION OF THE REPORT

The report contains, in addition to the introduction, four chapters.

Chapter 2 is a brief description of the existing situation and expected main trends in the development of the area. The purpose of this chapter is to give the reader a background to the extraction and evaluation of information from the existing Master Plans and other studies.

Chapter 3 deals with the evaluation of the Regional Plan for the Southern Region and existing Master Plans for Abha and Khamis Mushayt.

The Master Plans evaluated have been prepared by Kenzo Tange URTEC and were officially made available to Scan Plan SWECO on 15.11.1398h(17.10.1978). These Plans have so far not been approved by the Ministry of Municipal and Rural Affairs and no Master Plan exists for the Municipality of Ahad Rafidah.

Chapter 4 includes an evaluation and brief reviews of other studies which were carried out by independent agencies in connection with the planning and development of the areas concerned.

In Chapter 5 a conclusion regarding the relevance of the various studies to the preparation of the Master Directive Execution and Action Area Plans is given.

CHAPTER 2

PRESENT SITUATION

2.1 GEOGRAPHICAL LOCATION OF THE ABHA METROPOLITAN AREA

Abha Metropolitan Area is located in the central part of Asir Province and includes the three municipalities of Abha, Khamis Mushayt and Ahad Rafidah (Figure 1).

Abha is the administrative centre for the Southern Region. Khamis Mushayt has a long tradition as a commercial centre for Asir. Ahad Rafidah is a rural municipality covering the south-eastern part of the Metropolitan Area (Figure 2).

The area has good road connections to Taif, Mecca and Jeddah, and to Riyadh via Taif. A modern highway also connects the area with Najran and the Yemen border.

A new highway is under construction to Jizan at the Red Sea and only about 20 kilometres of the road remains to be upgraded. The road is at present carrying a heavy volume of traffic to and from Jizan and the Tihama rural area.

A project for a highway direct to Riyadh is in progress at present.

A new airport mid-way between Abha and Khamis Mushayt was opened in Dhu Al Hijja 1397 (November 1977).

LOCATION OF ABHA METROPOLITAN AREA WITHIN THE SOUTHERN REGION

LEGEND :

- SOUTHERN REGION BOUNDARY
- ▬▬▬▬ ABHA METROPOLITAN AREA BOUNDARY
- ESCARPMENT AND ABHA METROPOLITAN AREA BOUNDARY



P11

Scale 1:2000 000

0 50km 100km



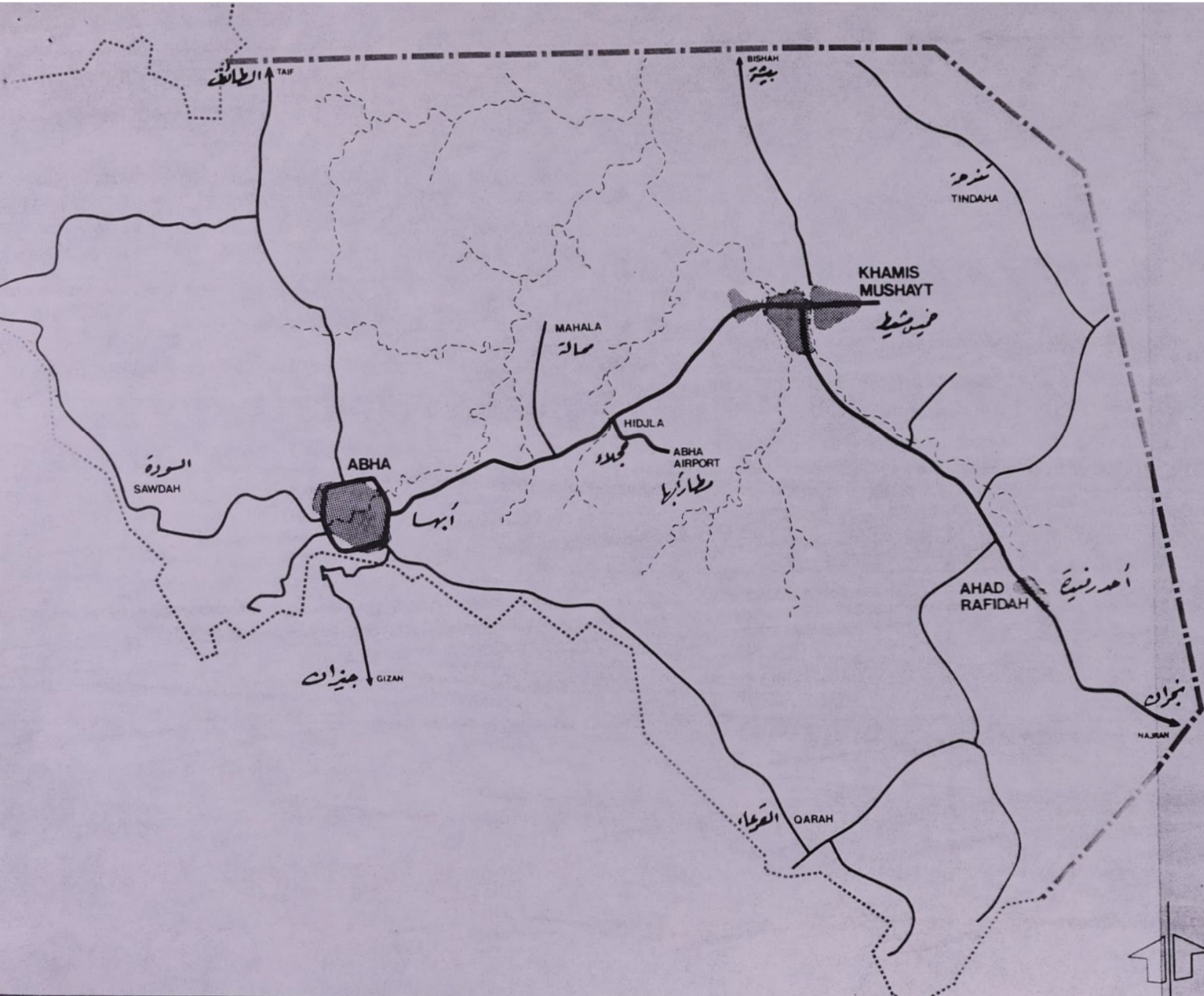
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ABHA METROPOLITAN AREA

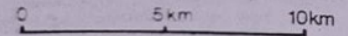
LEGEND:

- AREA BORDER
- ESCARPMENT AND AREA BORDER
- MAIN ROAD
- - - WADI



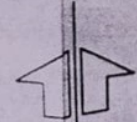
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2.2 NATURAL ENVIRONMENT

2.2.1 Topography

The Metropolitan Area is located in the Asir range of the Tihama Mountains. In the north-western part of the area the mountains reach a height of 3,000 metres and in the south-eastern area the height is around 2,000 metres. The whole area is characterised by rocky hills and wadis cutting through the areas mainly in a south to north direction.

2.2.2 Geology

The rocks in the western part of the area are of sedimentary origin, mainly schists, but volcanic greenstones are also abundant. In the eastern part old granite and gneiss predominate.

The soils in the area are extremely variable. Fine textured soils, useful for agriculture, can be found in the wadis and on the terraced slopes.

2.2.3 Climate

The climate of the Abha Metropolitan Area is generally influenced by the southerly monsoon. West winds carry warm moist air from the Red Sea.

The annual mean temperature in Abha is 16°.9C, ranging from 12°.5C in January to 21°.2C in June.

The annual mean precipitation rate in the area varies from about 550mm in the Sawdah Mountains to less than 200mm in the north-east.

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The area generally has a very good climate without any extreme hot season or long dry periods.

2.2.4 Vegetation

Forests of *Juniperus procera* are found at elevations ranging from 2,500 to 3,000 metres, and these areas are the most densely forested in the Kingdom. In wadis which are not cultivated forests and woodlands of *Acacia* are common.

The mountain flora includes also some perennial grasses of high grazing value, e.g. *Cenchrus ciliaris*, *Themeda triandra* and *Cynodon dactylon*.

Crop production in the area is both rainfed and irrigated. The rainfed crop production comprises mainly wheat, barley and sorghum. The crop production on irrigated land comprises sorghum wheat, barley, vegetables, alfalfa and fruits.

Even though the area has a comparatively high rate of precipitation the shortage of water limits the possibilities for agriculture.

2.3 SOCIAL AND ECONOMIC CONDITIONS

The social and economic conditions described in this chapter are a summary of the most important data obtained through the socio-economic surveys made within the Abha Action Master Plan project and data derived from the existing Master Plans and other studies.

The projections presented are preliminary and will be more thoroughly presented in Report No. 5.

The purpose of this information is to give a basis for the evaluation of the Master Plans and other studies carried out for the area.

2.3.1 Demography

The Abha Metropolitan Area has, according to the surveys made by SPS in the month of Shaban 1398 (June-July 1978), a population of about 150,000 inhabitants of which the urban areas of Abha, Khamis Mushayt and Ahad Rafidah have 38,000, 55,000 and 2,700 inhabitants respectively. The rural area has about 55,000 inhabitants.

The non-Saudi population is about 20,000, nearly all within the urban areas.

The 1394(1974) census gives 30,354 inhabitants in Abha and 48,197 inhabitants in Khamis Mushayt, and a non-Saudi population of 18,388 for the Abha and Khamis Mushayt Municipalities.

Preliminary population projections for the Metropolitan Area based on the SPS surveys and the 1394(1974) Census shows a total population, including migrants into the Metropolitan Area, of 350,000 in 1415(1995). The rural population is estimated to be 75,000. The population of Abha is assumed to be about 100,000 inhabitants. The population in Khamis Mushayt and Ahad Rafidah together is estimated to be about 175,000.

The future distribution of the population growth between Khamis Mushayt and Ahad Rafidah will be a result of the planning policy and building activities in the two municipalities. Provisionally it is estimated that Ahad Rafidah urban area will have about 25,000 inhabitants in 1415(1995) mainly due to people moving there to work in the large centres of employment, particularly the military establishments, to the north of the town.

2.3.2 Economy

General

The development in the Southern Region as a whole has until recently been based on agriculture. Large areas of dry land farming exist both below the escarpment in Tihama and above in the province of Asir. Irrigated agricultural land, based on ground water wells, exists along the major wadis.

Industrial development has started in the larger urban centres. A cement factory has been constructed in Jizan supplying the whole region with cement. Industries for other building materials have developed around the urban areas. Such industries are producing prefabricated concrete elements, concrete blocks, doors, windows, gates, etc. Workshops for the maintenance of vehicles and building machinery are developing very fast. No primary industries, except agriculture, exist at present and apart from the industries for building materials no other secondary industries have developed

The opportunities for establishing other primary and secondary industries in order to form a basis for future development of the area are small.

The surroundings of Abha have a good potential for tourism. Projects for developing this resource are under way. Abha and Khamis Mushayt together form the largest urbanized centre in the Southern Region which is benefitting the whole Abha Metropolitan Area. Abha is an administrative centre with a large number of governmental employees. Khamis Mushayt is the main commercial centre of the Southern Region. Also located in the area, but outside the scope of this project, are large military establishments employing large numbers of people.

The Abha Metropolitan Area is, because of these factors, growing very fast. As a consequence the cities of Abha and Khamis Mushayt have a large in-migration of population from other parts of the Southern Region. The rapid expansion of governmental establishments, the range of building activities taking place and the fast growing commercial activities have also resulted in the need for a large labour force.

Labour Force

The total labour force in the Metropolitan Area (i.e. the male population over 15 years) has been estimated to be 42,800 persons based on the SPS socio-economic survey. Out of this total, about 80% was, at the time of the survey, in employment. That is about 10,000 in Abha, of which 54% were non-Saudi, and about 13,000 in Khamis Mushayt, of which 41% were non-Saudi.

In addition to these numbers there are also a large number of employees in the governmental establishments located in the area but not included in the scope of the planning task.

Commercial Activities

In the period 1387(1967) to 1396(1976) commercial establishments were set up with great rapidity in Khamis Mushayt so that the number of commercial establishments increased by over 70% in the first four years at a rate of 14.5% each year. In Abha the increase was only about 33% in the same period, or 7.4% a year. In the five years from 1391(1971) to 1396(1976) the number of commercial establishments in Abha grew by almost 67% at an average rate of 10.4% a year, while in Khamis Mushayt the increase was over 90% at a rate of 13.9% a year.

The pace of growth in Abha was faster than in the earlier period, while in Khamis Mushayt there was a slight slackening in the rate of growth.

Income

Existing conditions reports prepared by Kenzo Tange and URTEC (Zul-Haj 1396/November 1976) provide some information on income distribution in the study area. However, since this time, a continuation of substantial inflation plus an increase in incomes measured in real terms will have changed this situation. The socio-economic survey has gathered information on this aspect, and enabled an up to date picture to be formed, which can be compared with the earlier data set out in Table 1.

TABLE 1 MONTHLY EARNINGS 1395(1975) AND 1398(1978)

Monthly Income	Abha		Khamis Mushayt	
	1395 1975	1398 1978	1395 1975	1398 1978
0 - 250 SR	5.5%	} 5.4%	8.4%	} 18.3%
251 - 500 SR	17.7%		18.8%	
501 - 1000 SR	37.6%	17.3%	38.6%	25.9%
1001 - 2000 SR	23.2%	47.8%	21.9%	38.8%
2000 and over	16.0%	29.5%	12.3%	17.0%

SOURCE: URTEC 5% Sample Survey, 1395/1975
 SPS Socio-Economic Survey, 1398/1978.
 (current wage rates converted to
 1395(1975) levels).

In 1398(1978) Kenzo Tange URTEC presented their final reports on the Southern Region Project Study. These reports included a Regional Study, entitled the Physical Plan Report, Southern Region, and Master Plan Reports for the main centres in the region, of which Abha and Khamis Mushayt were included from the Metropolitan Area. These plans have so far not been approved by the Ministry of Municipal and Rural Affairs.

For the town areas of Abha and Khamis Mushayt Master Plans have been prepared by the former Town Planning Office of Abha and approved in 1394(1974). For Ahad Rafidah village, which is also included in the Action Master Plan project, no Master Plan exists.

The Master Plans prepared in 1394(1974) for Abha and Khamis Mushayt give the land use pattern and street networks for the town areas.

Most of the areas covered by these plans are at present developed or planned in detail. A large part of the road network is constructed or is in the process of construction.

These two plans are presented in Figures 3 and 4.

These Master Plans, however, were soon in need of extension and revision. New Master Plans were thus prepared by Kenzo Tange URTEC as mentioned above.

مَدِينَةُ أَبْهَا

مقياس الرسم ١/٥٠٠٠

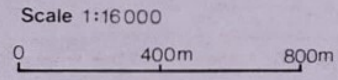


يستهدف المخطط لامتداد المنطقة الحضرية في مدينة أبها
 المخطط الحضرية لمدينة أبها مبنية على أساس المخطط
 يوضح خطة المخطط
 سكنية وطرق الرئيسية
 المرافق الأساسية من الكهرباء
 والمرافق الأساسية للمياه
 سيتم دمجها وبقية من المدينة حسب الإمكانيات وقد لها
 المرافق الأساسية من المياه والكهرباء والمرافق الأساسية
 مرافق الطوارئ من مياه الشرب والمرافق الأساسية
 مرافق الصرف الصحي ومرافق التخلص من النفايات
 مرافق المياه الجوفية والموارد المائية خارج الحدود البلدية حسب تعليمات وزارة الإسكان



- مناطق حضرية
- مناطق سكنية
- طرق
- مناطق خضراء
- مساحات
- مناطق
- مناطق مياه
- مناطق
- مناطق سكنية
- مناطق
- مناطق

ABHA MASTER PLAN
 1394 (1974)
 Source: TPO Abha



تم إعداد الخطة
 من قبل
 ١- م. م. م. م.
 ٢- م. م. م. م.
 ٣- م. م. م. م.
 ٤- م. م. م. م.
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 ٦- م. م. م. م.
 ٧- م. م. م. م.
 ٨- م. م. م. م.
 ٩- م. م. م. م.
 ١٠- م. م. م. م.

بسم
 ناييف بن عبدالعزيز

مملكة العربية السعودية
 وزارة الشؤون البلدية والقروية
 إدارة التخطيط العمراني
 م. م. م. م.

KINGDOM OF SAUDI ARABIA
 MINISTRY OF MUNICIPAL & RURAL AFFAIRS
 DEPUTY MINISTRY OF TOWN PLANNING

PLANNING AND DEVELOPMENT
 DEPARTMENT FOR
 ABHA METROPOLITAN AREA

المخطط العام

لمدينة خميس مشيط

مقياس 1:5000



ختم هذا المخطط العام للمدينة خميس مشيط
 في شهر ربيع الثاني سنة 1394 هـ الموافق
 1974 م في مدينة الرياض
 المهندس المعماري
 الدكتور محمد بن عبد العزيز
 مدير إدارة تخطيط المدن
 المهندس المدني
 الدكتور محمد بن عبد العزيز
 مدير إدارة تخطيط المدن

- المدن والقرى
- الطرق الرئيسية
- الطرق الفرعية
- الحدود البلدية
- الحدود الحكومية
- الحدود الدولية
- الحدود الطبيعية
- الحدود الصناعية
- الحدود الزراعية
- الحدود السكنية
- الحدود التجارية
- الحدود الحكومية
- الحدود الدولية
- الحدود الطبيعية
- الحدود الصناعية
- الحدود الزراعية
- الحدود السكنية
- الحدود التجارية

KHAMIS MUSHAYT MASTER
 PLAN 1394 (1974)
 Source: TPO Abha

Scale 1:16000
 0 400m 800m

KINGDOM OF SAUDI ARABIA
 MINISTRY OF MUNICIPAL & RURAL AFFAIRS
 DEPUTY MINISTRY OF TOWN PLANNING

PLANNING AND DEVELOPMENT
 DEPARTMENT FOR
 ABHA METROPOLITAN AREA

مخطط
 1- مخطط تخطيط المدن
 2- مخطط تخطيط المناطق السكنية
 3- مخطط تخطيط المناطق التجارية
 4- مخطط تخطيط المناطق الصناعية
 5- مخطط تخطيط المناطق الزراعية
 6- مخطط تخطيط المناطق الطبيعية
 7- مخطط تخطيط المناطق الحكومية

إدارة تخطيط المدن
 المملكة العربية السعودية
 الرياض
 1394 هـ
 1974 م



In the Abha Action Master Plan Project, SPS has been asked to revise the Kenzo Tange URTEC Master Plans and to prepare new Master Directive Plans which eventually shall replace the above mentioned Master Plans prepared by the former TPO of Abha and Kenzo Tange URTEC.

The Southern Region Project Study elaborated by Kenzo Tange URTEC includes an Existing Conditions Study, an Alternative Strategy Study, and Preliminary Master Plans for the Cities. These are summarized in the final reports on the Physical Master Plan for the Region and Master Plans for the cities.

In this chapter an evaluation of the final reports is given. The Existing Conditions Study, which gives more detailed information than the final reports, is used as a reference in the preparation of Reports 5 and 9.

3.1 PHYSICAL MASTER PLAN FOR THE SOUTHERN REGION

This report deals with the development of the Southern Region, an area of about 140,000km² and a population of a little more than 1 million inhabitants. The Metropolitan Area covers only a small part of the area - 2,000km² - and about 150,000 inhabitants. The development of the Southern Region has, however, a strong influence on the development of the Abha Metropolitan Area as this latter area is located centrally in the region and is the most developed part of the region.

3.1.1 Development Objectives of the Region

The study emphasises that the region, according to the National Plan, should concentrate on the development of

- (i) agriculture
- (ii) domestic tourism
- (iii) industry (where feasible)
- (iv) mineral extraction.

The region should also play its part in the effort to meet the national social-development goals and the goals for the development of infrastructure.

The study states that a predominant characteristic of the Southern Region is its rich ground water supply and consequently its high agricultural potential. The annual rainfall in the region is stated to be 400 to 500mm.

This refers, however, only to very limited areas of the region such as the western parts of the Abha Metropolitan Area. Even if the region has a comparatively high precipitation parts of the region suffer from a shortage of water. This is the case in the Abha Metropolitan Area where the agricultural production will decrease if water is not imported from other areas or if a de-salination plant is not built at the Red Sea.

3.1.2 Sub-Regions and Development Potential

The Southern Region has been divided into four sub-regions which have initially been defined by meteorological conditions and then adjusted so that the boundaries correspond as closely as possible to administrative and tribal borders.

The Asir sub-region is defined as a strip along the escarpment. Half the area is located below the escarpment.

The Abha Metropolitan Area is located in the centre of the Asir sub-region.

It is stated that the Asir sub-region offers good possibilities for economic development, viz:

(a) Administration and Commerce

Abha and Khamis Mushayt are logical centres for governmental administration, social services and commercial activities.

(b) The Production of High Value Agricultural Products

It is mentioned that the area has favourable climatic conditions for agriculture. As mentioned in the previous paragraph the conditions are not so good as are stated in the Kenzo Tange URTEC Study.

(c) Manufacturing Activities

It is mentioned that the rapid growth now taking place in the sub-region provides an opportunity for the development of a building-materials industry. This type of industry cannot be regarded as having a development potential as it is a type of service industry dependent upon development created by other measures.

(d) Tourism and Recreation

The attractiveness of the region offers an opportunity for providing recreational services to meet the needs of both the region and the entire Kingdom.

Of the development potentials mentioned above administration, commerce and tourism will have a strong influence on the Abha Metropolitan Area. Not mentioned but which has had, and will have, a strong influence on the development of the area, are the large military establishments outside Khamis Mushayt.

3.1.3 Water Resources and Development Potential

In this chapter it is mentioned that the existing water resources in the Asir sub-region are limited to 200 million m³ per annum. At present 100 million m³ per

annum is consumed. It is also stated that careful planning must be undertaken to ensure the most appropriate and effective distribution of the available water resource. This statement does not correspond to the very optimistic proposals about agricultural development mentioned in the previous chapters. However, the latter statement gives a more correct picture of the situation.

According to surveys made by SPS in Shaban 1398 (July 1978) the weekly water consumption for domestic and agricultural use in the Metropolitan Area was about $100,000\text{m}^3$. This consumption, which was at the end of a period of drought, corresponds to the amount of water possible to extract. Roughly this is equivalent to a consumption rate of about 5 million m^3 per year.

In 1410(1990) the estimated consumption for domestic use only will be 20 million m^3 per year.

Studies carried out for the Ministry of Defence and Aviation⁽¹⁾ show that the best possibility to supply water for the area is through a de-salination plant at the Red Sea.

It is also mentioned by Kenzo Tange that the natural consequence of the de-salination programme will be a shifting of the centre of gravity of regional development towards the coast, and that regional and other planning activities must take this into account.

There are, however, other factors to be considered of which many have a strong influence on the development of the central part of the region. It has also been shown that there are good possibilities to supply the Abha Metropolitan Area with water from the Red Sea. The policy stated in the Kenzo Tange URTEC report should thus be reconsidered.

Tables are presented in this chapter giving the water catchment areas, annual surface run-off and available run-off/recharge for the wadis within the sub-region.

The total water resources available in the sub-region are also given. This is, however, of limited value as the sub-regions cover large areas and both the water consumption and resources vary considerably within the regions.

Estimates of the annual fluctuations in precipitation and the possibilities to extract water are not given in the report. Surface water reservoirs and sub-surface storage cannot completely eliminate the influence of fluctuations in the annual precipitation.

Finally the estimated average daily water consumption per capita of 150 litres in urban areas in 1415/1995 must be regarded as low. A more realistic figure is in the order of 300 litres per capita.

3.1.4 Development Policy for Agriculture

This chapter of the Master Plan Report deals mainly with the existing conditions in the Southern Region which give valuable data for the overall planning of the agricultural development. Information for a relatively limited area such as the Abha Metropolitan Area cannot be obtained from these surveys. A special agricultural study has been carried out by an SPS expert in order to overcome this lack of information.

3.1.5 Development Policy for Livestock Raising and Fishing

In this chapter it is mentioned that the Asir Sub-region has large areas suitable for livestock grazing (100,000 ha) and that this potential has been unrealized.

The following development is mentioned as possible for the Asir Sub-region:

- (a) Vegetable production, including alfalfa and vegetable by-products that can supply fodder for livestock.
- (b) Grazing of cattle on the range lands.
- (c) High-intensity dairy farming.
- (d) Poultry production, particularly in the highlands.
- (e) Bee-keeping and honey production.

3.1.6 Development Policy for Industry

In this chapter it is of interest to note the policies stated for different industries. Below are given extracts of these policies.

Development of manufacturing industry.

The major manufacturing activities anticipated in the Southern Region are those related to the building and construction industry, repair and maintenance service industries, and agriculture and livestock raising.

It is recommended that noxious industries be kept to the absolute minimum in the Asir Mountain area and for this reason Khamis Mushayt and Abha are not recommended for the extensive development of the cement industry.

Manufacturing industry which is considered suitable for the Abha Metropolitan Area is only that which is related to service industry and building construction. Most manufacturing establishments in the area at present are also related to these industries.

Mining Industry

The Southern Region is located on a part of the Cambrian Shield. There is thus a significant possibility that mineral deposits, particularly metallic ores, are located in the Region. At present, however, almost no exploitation of mineral resources has occurred. A number of ore deposits have been identified as deserving priority investigation by the Directorate General of Mining Resources in the Asir Region:

- (a) Copper and silver in the Wadi Yiba district, approximately 100 km north of Khamis Mushayt.
- (b) Zinc and copper in the Ash Sharb area, 150 km north-east of Khamis Mushayt.
- (c) Titanium and nickel in the Wadi Wassat, 150 km east of Abha.
- (d) Copper in the Al Massan area, 100 km east of Abha.

However, not until the quality and quantity of these resources are known can they be regarded as potential for industrial development.

Heavy Industry

Two categories of heavy industry are identified in the Study. "Class A" is defined as a facility employing at least 100 persons and having a capital value of at least SR15 million. It is stated that it is unlikely that such industry will be developed in the Southern Region. The other category, "Class B", is defined as heavy industry developed by an enlargement of existing industries in the region. It is stated that this class has a much greater likelihood of being developed in the Southern Region.

These statements do not give any information of value for the planning of the Abha Metropolitan Area.

The whole chapter indicates that it is very difficult to foresee any industrial development in the Region. For the planning of the Abha Metropolitan Area, surveys of industrial establishments have been carried out and a discussion about the development will be presented in Reports 5 and 9.

3.1.7 Development Policy for Commerce and Service Industry

The type and number of shops in the towns are given as well as the number of employees and establishments by employment size. The data are from 1391(1971) (1392 Statistical Year Book) and from Kenzo Tange Urtec field surveys, September 1975.

The structure of commercial relationships within the Southern Region is also analysed in the chapter. Abha and Khamis Mushayt together form the regional centre serving the entire region, which has more than 1,000,000 inhabitants. Abha and Khamis Mushayt, as sub-regional centres, also serve more than 100,000 inhabitants.

Land area requirements for this purpose are given as 0.5 m^2 to 1.0 m^2 per inhabitant. Floor area requirements are given as 0.1 m^2 to 0.2 m^2 per inhabitant. The radius of the catchment area for the regional centres are assumed to be the cities and neighbouring communities. The regional population beyond the cities and their neighbouring communities are also served on a less frequent basis. For community commercial centres, which serve areas of approximately 30,000 inhabitants, figures of the same size are given for land requirements. For neighbourhood commercial centres, which serve areas of 2,500 to 5,000 inhabitants, land requirements of $2-4 \text{ m}^2$ per inhabitant and sales areas of 0.25 to 0.50 m^2 per inhabitant are given.

A more correct method of calculating the commercial floor area is to base these calculations on:

- (a) Household expenditure on retail goods.
- (b) Turnover in different centres by the inhabitants living in the catchment areas.
- (c) Necessary turnover per square metre in different types of retail trades in order to make them economically viable.

On the basis of such data for different years the need for commercial floor areas can be calculated. Normally such calculations show that the commercial floor area per capita increases with increased household incomes. The per capita floor area requirement in sub-regional centres will also increase when the standard of transportation is improved, for instance by increased car ownership.

Areas with special features for tourism and recreational development are mentioned in the Kenzo Tange Report as being Mahala, Sawdah and Qarah within the Metropolitan Area. At Mahala a large Sports Centre is at present being constructed. The Sawdah and Qarah areas have been studied in detail and proposals have been made for the development of these areas by the Ministry of Agriculture and Water.

3.1.8 Population Projection and Demography

In this chapter a comprehensive description of the existing demographic situation and the methodology used for projection is given.

Kenzo Tange mentions that it is important to note that there is a declining population in the rural areas due to considerable migration into the urban centres and

that there is an outward migration from the Southern Region as a whole. This is supposed to be a result of the fact that educational and earning opportunities are more abundant in urban centres and in such national centres as Riyadh and Jeddah.

The total outward migration is estimated to be between 6,400 and 8,700 persons per year, which is about 0.7% of the total population. The net effect on the Abha Metropolitan Area has not been analysed. The Abha/Khamis Mushayt urban area is profoundly affected by population movements and is the most rapidly growing urban area in the Southern Region.

Population projections made for the whole region show an increase from about 1,000,000 inhabitants in 1395(1975) to between 1.5 and 1.8 millions in 1415(1995). However, the rural population is assumed in the projection to increase from 616,300 to over 1 million in 1415(1995). The population in the Asir sub-region is expected to grow from about 400,000 inhabitants in 1395(1975) to between 600,000 and 700,000 in 1415(1995). (See Tables 2 and 3). The projections made are in need of revision especially where they refer to the distribution of people between rural and urban areas.

3.1.9 Policy for Manpower and Social Development

The importance of education on all levels is stressed in this chapter. It is mentioned that the national objectives for manpower development are:

- (a) To increase the mean productivity of labour.
- (b) To increase the participation of Saudis in the labour force.

TABLE 2 POPULATION PROJECTIONS, SOUTHERN REGION

	1975	1980	1985	1990	1995
Survey Area ^a					
High		140,500	182,500	237,900	311,300
Low	108,500	131,800	160,500	195,800	239,100
Urban					
High	171,100	221,000	283,700	363,000	463,900
Low		208,700	252,200	303,200	363,500
Rural					
High	616,300	742,700	886,100	1,048,500	1,231,100
Low		722,700	830,400	941,100	1,054,500
Nomadic					
High	262,100	190,700	139,700	99,400	66,300
Low		218,100	181,700	151,200	125,900
Southern Region Total					
High	1,049,500 ^b	1,154,400	1,309,500	1,510,900	1,761,300
Low		1,149,500	1,264,300	1,395,500	1,543,900

NOTES:

- a. From URTEC 5% sample survey of population, 1974-1975.
- b. From Department of Statistics, 1974 National Census.
(Sub-Region) = (Urban) + (Rural) + (Nomadic)

Source: Kenzo Tange & URTEC, Physical Master Plan Report

TABLE 3 POPULATION PROJECTIONS, ASIR SUB-REGION

	1975	1980	1985	1990	1995
Survey Area ^a					
High		69,500	94,200	127,700	173,300
Low	51,200	64,700	81,700	103,300	130,400
Urban ^b					
High	79,800	105,300	138,700	182,700	240,900
Low		99,100	122,300	150,900	185,800
Rural					
High	217,700	262,900	311,600	363,400	417,400
Low		255,400	292,100	327,800	362,100
Nomadic					
High	105,700	77,000	56,400	40,200	26,900
Low		88,000	73,300	61,000	50,800
Sub-Region ^c					
High	403,200	445,200	506,700	586,300	685,200
Low		442,500	487,700	539,700	598,700

NOTES:

- a. From URTEC 5% sample survey of population, 1974-1975, Abha and Khamis Mushayt.
- b. Cities of Abha and Khamis Mushayt. (National Census).
- c. From Department of Statistics, 1974 National Census.
(Sub-Region) = (Urban) + (Rural) + (Nomadic)

Source: Kenzo Tange & URTEC, Physical Master Plan Report

- (c) To supplement the labour force with foreign workers only as necessary, attracting labour from abroad but not allowing wholesale takeover of any sector by them.
- (d) To provide job-related education and training at the pre-career and in-service levels.

The key policies of these objectives are:

- (a) To increase productivity by training and educational programmes.
- (b) To increase the number of Saudis in the labour force by improving working and remuneration standards.
- (c) To adopt whatever measures are necessary to attract and retain appropriate outside labour.
- (d) To develop further the system of job-related training programmes.
- (e) To continue and expand training abroad.

The following issues are among those that must be taken into account in the regional physical plan:

- (a) Foreigners make up nearly one-third of the city workers in the Southern Region (21% Yemenis, 11.6% other, 32.6% total non-Saudi); this is in comparison with an average of 20% in other regions of the country.
- (b) It is estimated that more than half of the potential indigenous labour force now moves out of the Southern Region, largely to obtain better educational opportunities or better jobs.
- (c) It is important that the job training system include agricultural training, both pre-service and in-service. This will be difficult due to the low population densities and remoteness of the rural agricultural areas.

- (d) Due to the rapid rate of growth it is expected that the government sector will be the most rapidly growing (15.9% annually compared with 7.9% for the entire labour force). Already 50.8% of the total personal income in the area comes from the Government. This is acceptable for the present, but private sector growth must be established for the long-term economic health of the region.

The implications of the national objectives in the formulation of the Regional Physical Plan are:

- (a) The initial problem that must be overcome is reaching the school age population. This is difficult in the Southern Region because of the remoteness of the area, the highly dispersed population with relatively few areas of substantial density, and the nomadic habits. No single action can overcome this, although it is clear that the school system must be sufficiently flexible and mobile to reach their clients.
- (b) Education plays a major part in other aspects of regional development. For example:
 - (1) Seeking of better education by an individual or for his family is a major cause of out-migration.
 - (2) Education is a fundamental part of a variety of social services that are to be developed, such as health care.
 - (3) Education will be necessary for the operation of various high-level industrial, commercial, and agricultural activities.
- (c) Educational investment must take the form of both human and physical resources, and care must be exercised in development.

The Abha Metropolitan Area has a key geographical location for higher education and as the area at present is also the most developed part of the region it is the obvious place for locating higher education intended for the whole Southern Region.

With regard to health care it is mentioned that the national objectives are to provide the Kingdom with a comprehensive system of preventive health services. The number of beds in modern hospitals should, for instance, be increased to a standard of 2.5 per 100 persons by 1400 (1980).

The facilities which are necessary to accomplish the objectives include the following:

- (a) Specialized hospitals located in the major cities of the Kingdom.
- (b) General hospitals in urban communities.
- (c) Dispensaries, staffed by physicians and providing both preventive and curative services.
Type A in communities of 10,000-15,000 inhabitants.
Type B in communities of 5,000-10,000 inhabitants.
- (d) Health Centres serving the smallest communities.
- (e) District dispensaries in major towns serving 40,000 inhabitants.
- (f) Specialized facilities providing such services as bilharzia and malaria control.

The Bedouin settlement policy is also discussed. It is a national policy to encourage and assist the settlement of the Bedouin.

3.1.10 Development of Infrastructure

As an introduction to this chapter it is mentioned that the elements of infrastructure include:

- (a) Transportation of passengers.
- (b) Transportation of freight.
- (c) Personal and business communications.
- (d) Mass media communications.
- (e) Housing.
- (f) Utilities and public service facilities.

The term infrastructure refers normally to the networks constructed to facilitate the provision of the services mentioned above. Housing is not infrastructure and should not be dealt with here.

A schematic representation of the elements of the infrastructure as mentioned above is given. This provides a general description of the types of facilities appropriate to a hierarchy of centres, ranging from the regional (Abha and Khamis Mushayt) serving about 1 million inhabitants to small villages serving about 100 people.

For the preparation of Master Plans and Action Area Plans a more detailed analysis is necessary.

The rest of the chapter gives a comprehensive description of transportation planning. It is mentioned that the policy for transportation planning should be based on three important considerations:

- (1) An integrated land use transportation plan.
- (2) An attractive public transport system.
- (3) An efficient commodity distribution network.

This policy is of great importance and has to be taken into account in the planning of both Abha and Khamis Mushayt.

Traffic flow diagrams giving traffic per twelve hour period to and from major cities in the region are illustrated. The illustration gives a general picture of the situation. It is, however, not stated to what year and time of year the data refers and the presentation is very rudimentary. The material thus has a limited value for the planning of the Abha Metropolitan Area. New data has subsequently been collected in a traffic survey carried out within the Action Master Plan Project.

Desire lines showing trips per day in 1995 to and from Abha and Khamis Mushayt are shown in another illustration. This figure can also only be used as a rough illustration of the situation. The very high traffic volume between Khamis Mushayt and Butah indicated in the figure must be wrong. Such a large volume can only appear on the section of road between Khamis Mushayt and the Military Bases.

An assignment of the desire lines to a proposed main road network is also illustrated. The illustration of assigned traffic does not correspond to the illustration showing desire lines. For instance, the total traffic between the coastal zone and the Abha-Khamis Mushayt area is, according to the scale shown in the illustration of desire lines, more than 10,000 vehicles per day and in the illustration of assignments, 4,800 vehicles per day. Furthermore, desire lines indicate a total traffic flow between Bishah and Abha/Khamis Mushayt of more than 5,000 vehicles per day. The assigned traffic is less than 1,700 vehicles per day. The presented traffic projections are not consistent and new data has to be calculated.

A proposal for a main road network in the region is presented. The road system is classified into four types:

- A Primary Road System which consists of inter-regional highways, regional highways and major arterials designed for high speed and maximum travel comfort. A design speed of 100-120 km/hour and a cross-section of four or six lanes is proposed.
- A Secondary Road System which consists of major arterials and minor arterials designed for travel at 80-100 km/hour and with a cross-section of two or four lanes.
- A Local Road System which consists of collectors, distributors and local access roads.
- Scenic Routes which can consist of any of the above mentioned roads, with their design oriented towards the aesthetics of route selection, together with scenic view points with parking and picnic facilities.

The functional classification and design criteria must not necessarily be combined to such an extent as is done in the criteria mentioned above. The proposals made also do not follow the design criteria stated.

In the proposed future main road network, for instance, there are primary roads connecting all major cities in the region. However, the main part of this road system has a proposed cross-section of two lanes. The proposed road network does not take into account the regional roads at present under study by the Ministry of Communications.

The importance of environmental control is stressed especially that which refers to air pollution and traffic noise. These problems have to be taken into account particularly where the primary and secondary roads pass through urbanized areas.

Proposals for phasing the construction of the regional road network are presented. These recommendations are already out of date as several roads proposed to be built in 1400(1980) and even 1415(1995) are already constructed.

3.1.11 Development Plans

3.1.11.1 Agriculture Development Plans

The total arable land in the Southern Region is, in this chapter, estimated to be 285,000ha in 1415(1995) which is equal to the arable area in 1395(1975). The irrigated area is estimated to increase from 115,000ha in 1395(1975) to 185,000ha in 1415(1995). This is based on an assumption that 82% of the maximum water resources theoretically available can be utilized. Desalination of sea water has not been foreseen as an additional source for the urban population and other activities.

No detailed information on the location of arable land and the water balance for different regions is given in this chapter. It is thus of limited value for the study of the Metropolitan Area of Abha. A special agriculture study has therefore been carried out by Scan Plan Sweco.

A projection of the demand for agricultural workers is also presented. It is estimated that the number of agricultural workers shall increase from 117,000 in 1395(1975) to 148,000 in 1415(1995). The commercial production value per worker is estimated to grow from SR2,860 in 1395(1975) to SR4,580 in 1415(1995). This is a very low per capita production value in 1415(1995) for a country which has high labour costs at present and is in the process of rapid development. The modernization of agriculture and a better use of machinery is therefore important in order to increase the production value per worker and to decrease the number of workers so as to achieve a better balance with the other economic sectors

The future number of workers in the agricultural sector has, furthermore, a strong influence on the future rural population and thus also on the level of migration to urban areas. In this respect, a study by SPS is in progress for the Abha Metropolitan Area.

3.1.11.2 Livestock and Fishery Development Plan

It is mentioned in this chapter that the production value for livestock in the Asir Sub-region is assumed to increase from SR18.5 million in 1395(1975) to SR70 million in 1415(1995) (in 1395(1975) value). The demand for workers in Asir for range land and livestock farming is assumed to increase from 1,900 in 1395(1975) to 6,720 in 1415(1995). The production value per worker is assumed to decrease from SR13,160 to SR11,670.

It must be assumed that range land and livestock production will develop so that the production value per worker increases even if at present the value is considerably higher than for other agricultural products. It is not said where the increased production will be located within the Asir Sub-region and it is not mentioned what type of livestock will be produced. It is thus not possible to use the information for planning in the Abha Metropolitan Area. An agricultural study including these problems has been carried out by SPS.

3.1.11.3 Industrial Development Plan

It is mentioned in this chapter that the intentions of the national policies for industrial development are:

- to undertake efforts to process and store oil products to be used as raw materials for manufacturing;
- to expand cement production;
- to concentrate industrial development efforts on agro-industry;

- to explore the possibilities for manufacturing tractors and other farm implements and machinery;
- to expand established industrial activities such as cement-block making.

The possibilities for industrial development in accordance with these statements have to be studied in the Action Master Plan Project taking into account the local conditions in the Abha Metropolitan Area.

3.1.11.4 Commercial and Service Development Plan

Total commercial and service floor areas and the number of employees in Abha and Khamis Mushayt are given in this chapter for the years 1395, 1400, 1405 and 1415 (1975, 1980, 1985 and 1995). It is assumed that the floor area in Abha will increase from 15,800m² in 1395 (1975) to 48,000m² in 1415 (1995) and that the number of employees will increase from 715 to 5,149.

The increase in floor area is considerably lower than can be expected for towns growing three times in a period with increased per capita income.

In the same period the number of employees is expected to increase about 7 times which will result in a decrease in the floor area per employee from 22m² to 9m². Similar figures are reached for Khamis Mushayt. New estimates for commercial and service floor areas and employment have obviously to be made in the Action Master Plan Project.

3.1.11.5 Social Development Plan

In this chapter the national objectives for labour related development, key policies of these objectives and top priorities in education are mentioned.

The national objectives regarding health care are also mentioned. The need to provide opportunities for the nomadic population to settle is especially emphasized. These policies are the same as have been stated in the chapter on Policy for Manpower and Social Development.

3.1.12 Development Administration

3.1.12.1 Recommendations for the Implementation of Programmes and Plans

It is recommended in this chapter to add a Building and Architecture Section, a Conservation and Preservation Section and a Legal and Administrative Section to the regional town planning office in Abha. It is also recommended to establish two co-ordinating bodies. These questions have been dealt with in Report No. 2 in the Action Master Plan Project.

3.1.12.2 Organization and Administration

This chapter deals with the planning methods, policy formulation, and co-ordination. The ideal function of a regional town planning office and also the functions of the above mentioned (proposed) new sections are described. These questions have also been dealt with in Report No. 2 of the Action Master Plan Project.

3.1.12.3 Legislation and Regulations

In this chapter very detailed recommendations are given for Land Development Regulations for different planning levels. Most of these recommendations are such that they either have to be adopted on a national level or have to be stated together with the different plans.

The recommendations made in the regional physical plan are, however, a good check list. Most of these questions will be dealt with in Report No. 7 and in the Written Statements attached to the Action Area Plans.

3.1.13 Community Planning Standards

In each of the final reports presented by Kenzo Tange & Urtec there is included an appendix on community planning standards given as a set of guidelines for facility planning and community strategy.

3.1.13.1 Demographic and Density Frame for Standards

In this section is discussed population density for different parts of the urban areas. Present density and future density is given. The future density is assumed to be considerably higher than the present. In Abha it is assumed that the average density increases from 20 p/ha in 1395(1975) to 60p/ha in 1415(1995). The reason why this increase can take place is that there are large areas of empty land within the urbanized area. Estimates made by SPS show that the average density can be as high as 80 to 90 p/hain Abha inside the ring road including areas for public facilities, commerce and open spaces.

Regarding Khamis Mushayt the increase is assumed to be from 40 p/ha in 1395(1975) to 120 p/ha in 1415(1995).

Khamis Mushayt has at present less undeveloped areas than Abha within the town area. There is, however, no reason to assume such a large difference in the long run between the two cities.

Planning standards for density rates for low, medium and high density are given. Density rates of this type are the results of various standards for different components of the plan. For preliminary estimates the density rates can be used.

Population of age groups up to 19 years are given for application in the planning. Such data can vary considerably in different areas depending on age of the housing stock and types of houses. Data of this kind has to be studied for different types of areas and adjusted to local conditions, and will be done in the Action Master Plan Project.

3.1.13.2 Planning Standards for each Facility

Educational Facilities

Planning standards are given for the following facilities:

Nursery - Kindergarten
Elementary Schools for Boys
Elementary Schools for Girls
Intermediate Schools for Boys
Intermediate Schools for Girls
Secondary Schools for Boys
Secondary Schools for Girls
Teachers' Schools
Technical Schools for Boys
Technical Schools for Girls

Colleges
Special Colleges.

Detailed data are given regarding the age of children, enrolment, population served, size of facility, radius of area served, pupils per class and number of classrooms, land area requirement, floor area and location.

This information is of great value for the planning and layout of the town structure. Complementary discussions on the standards for educational facilities have to take place with the Ministry of Education and the Directorate for Girls' Schools, however, before the preparation of plans.

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Recreational and Athletic Facilities

Planning standards are given for the following facilities:

Tot Lot
Play Lot for Nursery/Kindergarten
Neighbourhood Park
Playground
Community Park or small City Park
Playing-field - level 1
Playing-field - level 2
City Park.

These standards make provision for large recreational areas for the population. If all the areas are added together there will be more than 30m² per inhabitant.

The Playing-fields levels 1 and 2 are connected to the schools and could as well have been included in the schools standards.

The possibility of using the standards proposed in built-up areas is dependent upon the possibility of acquiring land for this purpose. Modification of the standards is therefore necessary in many cases.

Religious Facilities

Standards are given for a Small Mosque, Jamia Mosque and Eid Mosque.

The population of 3,750 persons to be served by each Small Mosque is over estimated. At present this type of Mosque serves a smaller number of population and the buildings are also smaller than recommended here.

Eid Prayer Ground should be provided, by tradition, on the outskirts of the city.

Social and Cultural Activities

A Centre in this context is, according to Kenzo Tange, a building or complex of buildings solely constructed for social and cultural purposes.

Three types of Centre are proposed:

(a) Neighbourhood Centres serving about 4,000 people.

The neighbourhood centre is proposed to include a building with a floor area of 125m² to 250m². The purpose of this building is to provide facilities for different social and cultural activities both for young people and old people living in the Neighbourhood Unit.

The provision of facilities of this type has a high social value. They will function as meeting places for young and old people where they can play games together, discuss mutual problems and get information on problems which concern the people living in their own neighbourhood unit. If people living together in an area have these possibilities to meet and discuss, the sense of belonging to the community will increase. They will also feel a greater responsibility for the development of the public facilities, parks and streets and keep them in good order and thus improve the environment and feel more happy.

(b) Community Centres serving about 30,000 inhabitants.

The recommended floor area for this type of social and cultural centre is proposed to be 200m² to 400m². The community centre as described here has an additional floor area beside the commercial and other public facilities in a community centre. The need of such a floor area depends on the type of other facilities provided for different purposes in the community centre. In the Master Directive Plans programmes for all types of public facilities including social and cultural facilities will be elaborated.

(c) Civic Centre serving 60,000 people or more.

The Civic Centre is proposed to be the cultural and social centre for the city. There should be an art gallery, exhibition hall, mosque, museum and auditorium. It is said that these facilities should be designed as an integrated part of the town centre. This is of great importance as it improves the environment of the city centre.

Health Facilities

Standards are given for the following facilities:

- Pharmacy
- Subcommunity Diagnosis and Treatment Centres
- Community/General Hospital
- Special Hospitals and Nursing Home.

A list of the Special Hospitals required in the Southern Region, as identified by the Ministry of Health, is also given.

Planning of all health facilities will be made in consultation with the Health Department for the Region.

Commercial Facilities

Main functions, land area requirements and floor area (sales area) requirement are given for three types of shopping centre, namely:

- Neighbourhood centres serving about 4,000 inhabitants.
- Community shopping centres serving about 30,000 inhabitants, and
- Sub-regional shopping centres serving 100,000 inhabitants or more.

It is said that a smaller centre when in the vicinity of a larger one can be incorporated in the latter. It is important to take this into account in the preparation of Master Directive Plans and Execution Plans.

The floor area requirement for the different types of centres has to be calculated on the basis of assumptions regarding household expenditure pattern, the turn over per square metre of sales area, and factors influencing the choice of place for shopping.

All these factors are expected to change radically in the future as household incomes increase, modern shops will be established and the transportation networks will be modernized. New calculations on commercial floor areas will be made by SPS.

Public Buildings

Standards are given for the following public buildings:

- Fire Station
- Post Office
- Police Station
- Government Offices.

One fire station is recommended for a community of 20,000 to 40,000 inhabitants. It is recommended that stations should be located near centres, industrial areas and close to a road junction. It is important, however, that the station is not located close to junctions where traffic congestion is common or where there are only a few alternative routes to choose from.

One post office is recommended for each city and branch offices for each neighbourhood unit. The need for branch offices is dependent on whether the mail will be delivered to the customers. If a delivery system is to be established, there is only a need for branch offices in the community centres.

One police station is recommended for each city. There are different types of police stations to be established, however, and the recommended standard must be regarded as too low. The number and locations of police stations have to be reconsidered and discussed with the Ministry of Interior.

One Government Office complex is recommended for each city. However, several buildings are needed for different types of Governmental and also Municipal offices.

The need for Government Offices has to be discussed with the appropriate authorities. The given recommendation is too schematic.

Planning standards for housing and density are also dealt with under the heading Public Buildings, even though housing cannot be regarded as public buildings. On a theoretical basis population density in persons per hectare has been calculated as a function of building types. In a note to the illustration of this calculation Kenzo Tange correctly comments on this relationship as follows:

"It shows one exemplary case and is not necessarily always true. Actual relationship depends on detailed planning and design and design of neighbourhood unit". The figures given as "planning standards for housing density" are not, in fact, standard but a result of several standards applied in the preparation of detailed planning.

Planning Standards for Road and Street Networks

Standards for road and street networks have also been included under public buildings.

Roads and streets have been classified according to function and system. Standards for different functional classes of roads are given. The classification and standards presented are of the same kind as are normally used in connection with vehicular traffic in developed countries.

The problem in using such a table is that the road standards also have to be related to the traffic volume, the terrain conditions and the economic resources available. The table can consequently not be used without taking these into consideration and many exceptions are therefore necessary.

Roads and Parking

Examples of road sections are presented. These sections are only presented schematically and many details have to be elaborated further. Cross-sections for regional roads, for instance, shall follow recommendations made by the Ministry of Communications. Cross-sections in urban areas must vary considerably due to local conditions and the need to use the road for public utility networks.

Examples of multilevel junctions are presented in schematic figures. These figures are far too schematic to be used when road networks are designed.

Different types of multistorey car parks are shown schematically. The figures show the principle of using sloping floors and ramps and give a basis for estimating the space needed for parking places.

3.1.13.3 Application of Planning Standards

A hypothetical example of land area distribution based on the standards developed in the previous section is presented in this chapter. The very brief description of the application shows the land area needed for different facilities within a city of 60,000 inhabitants based on certain assumptions.

The presented example shows how the standards have to be applied in connection with the preparation of a Master Plan and it also gives a rough idea about the total spatial requirement for an urbanized area with a certain population and different population densities. For instance, the study shows that the total area is reduced to half if the net population density is increased from 100 persons per hectare to 400 persons per hectare.

Abha Master Plan Report reviews information on the existing conditions, presents projections and a physical Master Plan which outlines the development for a planning period from 1395 to 1415 (1975 to 1995). The evaluation of the Abha Master Plan Report has been presented in accordance with the layout of the Master Plan Report including 11 chapters which are reviewed and evaluated below.

3.2.1 Introduction

In this chapter is described a schematic planning process. The process deals separately with a number of planning elements such as housing, industries, commercial facilities etc. For each planning element the existing conditions are first briefly reviewed. Next, the projections of population and economic development are used for a projection of each particular planning element. Thirdly, a policy which will determine land use for the elements is developed by considering the schematic Master Plan, the community structure and the planning standard. The recommended overall development plan or the Master Plan is generated from the simultaneous consideration of the land use for all the individual elements.

The planning process described illustrates more a calculation method than a planning process. How the policies and objectives used for different elements, existing conditions, etc., will be interpreted in the Plan is not illustrated. A detailed description of an integrated planning process is presented by SPS in Report No. 2 of the Abha Action Master Plans Project.

3.2.2 Summary

It is expected that the primary functions of the city will be Government Administration, Tourism and Recreation, Education, and Cultural Activities and that Abha will function as a primary centre for the distribution of services and as a secondary centre for the collection and distribution of goods. In the summary Abha's historical growth, natural features, climate, land ownership and land values are briefly described. Physical structure and principal problems of physical planning are also briefly discussed.

It is mentioned that urban sprawl is occurring rapidly in the absence of planned areas. Principal problems of physical planning, besides the urban sprawl, which is the most serious problem at present, are stated to be:

- (a) The fact that Abha is a firmly established existing city with a fixed structure.
- (b) The hilly topography.
- (c) The maintenance of the rich and beautiful aesthetic and architectural tradition. This is regarded as a problem because so much of the old architecture is rapidly deteriorating or being demolished.

The absence of plans is not the only reason, or even the most important reason, why urban sprawl is taking place to such a large extent, especially in Abha. Another reason is the high land prices. The fact that Abha is an existing city should not be regarded as a problem; this is a condition for planning.

3.2.3 Population and Housing

Kenzo Tange & Urtec estimated the total population of the urbanized area of Abha Municipality to be 22,100 in 1395 (1975). The population according to the National Census 1394 (1974) was 30,200 inhabitants.

The SPS survey made in Shaban 1398 (July 1978) has shown a total population of 38,000 inhabitants. No major differences exist between the surveys which can explain the differences in population. Kenzo Tange has used the National Census figure for his projections. In 1415 (1995) the population is projected to be between 78,600 and 104,400 inhabitants. An estimate of 91,500 inhabitants has been used in the Master Plan projection.

The community structure standards described in the Regional Physical Plan are briefly described in this chapter of the report. The application of these standards in Abha gives three communities, each with about 30,000 inhabitants in 1415 (1995). The three communities have been divided into 24 neighbourhood units. In 1415 (1995) the population in the neighbourhood units ranges from 2,300 to 6,000 inhabitants. In 1395 (1975) several of the units had less than 500 inhabitants, and only five had more than 2,000 inhabitants.

The area north of Wadi Abha forms one community. The area south of the wadi has been divided into two communities. See Figure 5.

The need for a division of the town area into the proposed neighbourhood units is not discussed. Neither is it discussed how the units shall function during the twenty years it will take until they have reached the population needed to establish necessary services.

The housing need for each neighbourhood unit has been calculated on the basis that the household size decreases from 4.7 in 1400 (1980) to 4.3 in 1415 (1995). There are no indications that such a large decrease is expected to take place. The household size in 1398 (1978) was 6.2 according to the SPS survey.



FIGURE 5: PROPOSED RESIDENTIAL
Report 4 LAND USE IN 1415 (1995)

Source: Kenzo Tange & URTEC
Abha Master Plan

(60)

(61)

The population density within the town area is proposed to increase successively to 1415(1995). The highest density is assumed to occur south-east and-north west of the city centre. These areas are, to a large extent, already built up with new houses. Due to this, the density will be dependent on the extent to which a renewal of existing houses can take place. See Figure 6. (Figure 3.4.2 KTU).

3.2.4 Employment

The current labour force rate in Abha is mentioned to be about 22%. This number represents about 42% of the population above 14 years. The low figure depends on the absence of women in the labour force. Kenzo Tange assumes that the labour force will increase to about 30% of the population above the age of 15 years by 1415(1995).

At present, according to the SPS survey, there are about 20,000 active people in Abha, of which more than 50% are foreign workers. This is about 25% of the total population. The future active population has to be based on the future age structure and assumptions about the numbers of non-Saudi workers. The assumption made by Kenzo Tange that the labour force rate will increase due to the fact that there is a large pool of population below 15 years is correct only if the shape of the age pyramid is changing and if, in the future, the birth-rate will be lower. There is, however, no such indication at present. It can also be expected that more young people will attend school in the age group above 15 years which, instead, could reduce the labour force rate. Thus, new estimates of the labour force rates have to be made by SPS in the Action Master Plan Project.

In 1395 (1975) when Kenzo Tange made their survey of existing conditions there were about 3.3 hectares of land occupied by industries. Most of this land is along the Abha - Khamis Mushayt road inside the Abha town area. Kenzo Tange proposes that all industrial areas should be located outside the residential limits of the city.

This statement should not include all types of industry. The types of industry to be located outside the residential areas should be those which are causing noise, air pollution and heavy traffic. Small scale industries could preferably remain within the residential areas.

3.2.5 Civic, Cultural and Commercial Centres

3.2.5.1 General Education

Detailed calculations are presented concerning the number of pupils in primary, intermediate and secondary schools. The land requirement is calculated in accordance with the standards presented in the Regional Physical Plan. The locations of schools and proposed school districts are shown on a map. This map shows existing schools in 1395 (1975), proposed schools which have been approved by the Ministry and schools proposed in the Master Plan.

Since the Kenzo Tange Master Plan was presented, changes have taken place in several aspects and it is necessary to propose several new school locations and changes in the school districts. These have to be made at the time of the preparation of the new Master Directive Plan.

3.2.5.2 Public and Institutional Facilities

Higher and special education is assumed by Kenzo Tange to be located east of Abha along the Abha - Mahala road

and north of the Abha - Khamis Mushayt road. At present there is no final decision about these locations. The proposals need further consideration as there are also other locations which could be used for these purposes.

Regarding mosques it is proposed that there will be one small mosque for each neighbourhood unit and one Jamia mosque for each subcommunity. At present there are many more mosques than Kenzo Tange proposes for the future. The location of mosques has to be discussed with the appropriate authorities in connection with the preparation of detailed plans.

The need of facilities for health care is described briefly in this chapter and a table showing floor area and land area needed within a neighbourhood unit and community centre is presented. This material also needs more elaboration in connection with detailed planning. Recommendations for hospital standards given by the Ministry of Health are also presented.

Buildings for Public Administration are proposed to be built west of the existing governmental buildings along with a proposed park in order to create a civic centre. Kenzo Tange states that an integration of the park and a civic centre could create a spectacularly attractive and functional town centre. This proposal is also in need of further discussion as there are many advantages in a wider integration of all functions in the city centre.

3.2.5.3 Cultural Facilities

It is mentioned that a decision on building a historical museum has been temporarily suspended. The need for a historical museum is, however, considered essential. Two historical conservation areas are proposed. One in the

park west of the government buildings and another one immediately north of Wadi Abha in the city centre. Both the old forts in the town area are proposed to be protected.

3.2.5.4 Commercial Facilities

At present there is a concentration of commercial facilities in Abha city centre and along the road towards Khamis Mushayt. There are also small shops spread out in all residential areas.

Kenzo Tange proposes that each neighbourhood unit shall have a shopping centre. No detailed locations of these are given. Sub-regional and community shopping centres are proposed to be developed along the Abha - Khamis Mushayt road, the road from the city centre to Taif and in an area south east of the city centre. This area will be the largest shopping area in the town.

The proposed locations of the sub-regional and community centres have to be restudied. To a large extent the sub-regional centre shall be located in the city centre. This centre will also function as a community centre. Other community centres have to be combined with neighbourhood centres. The already established commercial activities along the main roads will remain as complementary shopping areas. This will be considered in the Action Master Plan Project.

3.2.5.5 Neighbourhood and Community Centres

A centre is proposed for each neighbourhood unit. Three community centres are proposed. These are organized so that centres of activity should develop along linear belts which connect boys and girls secondary schools situated at either end of the community.

The bands are one to two kilometres long and to some extent are located along main roads.

It is difficult to understand the purpose of these proposals. It is also difficult to find facilities which can be developed along these bands to such an extent that it will be functionally justified.

The community and sub-community centres have, instead, to be integrated into the commercial centres.

3.2.6 Recreation and Conservation

The existing recreation areas in Abha cover only 3.8 ha. The need for recreation facilities is expected to increase dramatically in the future. In the area surrounding Abha there are several natural recreation spots which are used by the population at present. Of these, Sawdah, Qarah and Mahala are planned to be developed. In Mahala there will be a large sports centre covering 25 hectares with possibilities for extension to 50 hectares. In Sawdah and Qarah tourist facilities will be built.

Kenzo Tange has, according to the planning standards presented earlier, calculated the total requirements within Abha town area to 221 hectares in 1415(1995), out of which 117 hectares will be located within neighbourhood units. The location of these recreational areas is shown on a map in the Master Plan Report. A network of parks and open spaces are illustrated on the map. The total requirement according to Kenzo Tange corresponds with normal standards in western countries. It may, however, be difficult to facilitate this need in already built-up areas of the city.

It is remarkable that Kenzo Tange is not proposing any park areas along Wadi Abha and that large parts of the open space network are proposed to be alongside existing streets in densely built-up areas. In connection with the revision of the Master Plan and the detailed planning of Abha, the proposals for recreation have to be revised.

The potential for developing tourism in Abha is regarded as the highest in the Kingdom. It has an exceptionally good climate, excellent natural vegetation and is surrounded by spectacular views of the Tihama escarpment.

Kenzo Tange proposes that the planned civic/tourist/convention centre which is proposed to be located in the south-west part of the city shall include as many first quality tourist facilities as possible. It is proposed that the centre should be integrated with the city park and be connected to the government offices in order to make this a lively area.

Conservation of open space for agricultural purposes is proposed along Wadi Abha. The edge of the escarpment south-west of the city is also proposed to be conserved in order to prevent this area from being developed. It seems unrealistic to expect that the wadi area in central Abha will remain agricultural land in the future. These areas have to be planned as parks and be taken care of by the Municipality.

It is proposed that valuable open space may be conserved by:

- (a) Zoning to prevent other use, and
- (b) Government purchase.

The main purpose of evaluating reports other than the Master Plan Reports is to extract information and to make it available when performing the different planning tasks.

A direct evaluation of the proposals made in these reports is not regarded necessary as these reports were considered in the preparation of Master Plan studies. However, in compliance with the Agreement, a brief review has been made.

The arrangement of this chapter is made so that the different reports are presented under headings which give the name of the responsible Ministry or Agency and the title of the report.

4.1 MINISTRY OF PLANNING, Second Five Year Development Plan 1395-1400(1975-1980), Jeddah: Dar Okaz, 1395(1975).

The Second Five Year Development Plan covers the period 1395-1400(1975-1980). As a statement of government policy it is an indispensable background to the Abha Action Master Plans. The development goals stated in the Plan are:

- maintain the religious and moral values of Islam
- assure the defence and internal security of the Kingdom
- maintain a high rate of economic growth
- develop human resources by education, training, and raising standards of health

- increase the well-being of all groups within the society and foster social stability under circumstances of rapid social change
- develop the physical infrastructure to support achievement of the above goals.

Some of the recommendations in relation to Asir have been implemented already (for instance the industrial area at Khamis). In particular the plan identifies main economic objectives for the Southern Region as the realisation of agricultural potential, utilisation of favourable natural resources, development of manufacturing and construction and realisation of the potential for tourism. Regarding agriculture the main objectives are as follows:

- To raise the per capita income and improve the standard of living of the rural people.
- To minimize the Kingdom's dependence on imported foods and other agricultural products.
- To release surplus labour for employment in other areas.

The present planning will obviously be based on these basic government objectives for development in the region.

Projects to be implemented within the programme of the Second Five Year Development Plan are presented in Report No. 1 of the Action Master Plans Project.

4.2 MINISTRY OF THE INTERIOR, Second Five-Year Programme for the Municipalities - Final Report,
Riyadh: Doxiades Associates International, 1395(1975).

This report reflects the general priorities and views initiated in the Second Five Year Development Plan. The need for modern technical services within the urban areas is stressed and since such services generally are not available in the Abha Metropolitan Area it is urged that these facilities should be given the highest priority.

A number of specific projects are listed for each of the three municipalities in the area. These lists involve all sectors within municipal development and a budget to cater for this development is introduced.

The major sectors covered by these projects are:

- stormwater drainage
- sewage disposal
- electricity supply
- transportation facilities (local roads and streets, bridges)
- public parks and toilets.

The projects identified are well under way, although some of them are subject to delays.

As an example, the construction of a sanitary sewerage system in Abha was supposed to commence by 1395(1975) but has not yet started - estimated time of commencement is the beginning of 1399(1979).

4.3 SOCIO-ECONOMIC DEVELOPMENT PLAN 1393/94-1399-1400 (1973/74-1979-80) for the South-West Region of Saudi Arabia 1393(1973), International Land Development Consultants, 1393(1973).

This report dates from 1393(1973) and was undertaken by International Land Development Consultants of the Netherlands. The annexes to the main body of the report (of which there were six) are not available.

The study provides information with regard to the Southern Region on:

- The Present Situation.
- The Region's Medium and Long-Term Development Potential.
- Development Objectives and Strategy.
- The Development Programme 1393/94-1399/1400(1973/74-1979/80).

This information provides useful background material despite the fact that the situation has changed considerably since the report was written. In particular, enormous improvements in infrastructure and services, housing, and educational and health facilities have been made, many of which result from the development strategy initiated by the Government which, in part, is an outcome of the study. In some measure the recommendations, both in the agricultural sphere and with regard to industrial development, many of which are eschewed in the later report "Industrial Opportunities in the Southern Region", remain valid since industrial development take-off has not happened on a significant scale, and improvements in agriculture have still not led to sufficient market surplus to encourage development of an agro-industry.

Measures proposed for the improvement of the agricultural production in the area include improved infiltration in the wadi aquifers by means of small dams in the wadis, the cultivation of high-value crops, in particular fruits and vegetables, and the afforestation of abandoned terraces in the mountains.

In more general terms the ILACO report has estimated an urban population for Asir in 1401(1981) of 43,000 whereas in 1398(1978) it is approximately 90,000 in Abha and Khamis Mushayt. The report failed to anticipate the rapid growth of urbanization, in part doubtless because the data base they were working from was very incomplete and contradictory.

4.4 INDUSTRIAL STUDIES AND DEVELOPMENT CENTRE, Industrial Opportunities in the Southern Region, Riyadh: Industrial Studies and Development Centre, 1396(1976).

This detailed study of industrial opportunities in the Southern Region was completed in Rabi Thani 1396(March 1976). This document remains an extremely important source of both background information and of guidance since the main premises on which it is founded (analysis of resources, of markets, of viability) remain entirely valid.

Main recommendations in the report relevant to the Abha Metropolitan Area are:

- action to improve the supply of skilled agricultural labour. Although progress is being made in this field, it remains a requirement for further action, and any plans for this activity will need to be integrated into the Master Plan.

- action to improve credit finance for agricultural development. Any such improvements in availability of credit finance, actual or planned, will need to be identified so that this possible impact on future rural development can be taken into account.

- action to increase the size of agricultural holdings. The existing plans and possibilities in this area will need to be investigated as part of the planning process.

- action for setting up of an industrial estate at Khamis. This has now been partially implemented. Land has been made available, although the full recommendations also included equipment with "warehouse and workshop facilities and...standard custom-built factories to be leased out to prospective investors". Plans and possibilities for implementing these recommendations will need to be investigated, and the location of the now established industrial zone at Khamis incorporated in the planning of the area.

- because of the lack of existing industrial activity and the relative weakness of the private sector in general, the study recommends that the government should be "undertaking directly productive investments such as the establishment of industrial estates and specific industries", as well as "a package of discriminatory incentives in favour of private investors to attract them to the relatively depressed regions".

The report recommends that "zoning regulations should be introduced in (Abha and Khamis) and insofar as practicable all the industries (existing and future) should be located on these industrial estates". The implications of this recommendation will need to be carefully considered in the light of these planning objectives. It may be in practice that such a recommendation could result in a discriminatory balance in favour of most future urban expansion taking place in Khamis rather than Abha, which may be considered undesirable on a number of planning grounds.

Industries specifically suggested for the Abha-Khamis area are:

- tomato paste and juice. Clearly this cannot be established until there is sufficient assured agricultural surplus of tomatoes to supply it.
- leather tanning and curing establishment. This has not yet been established.
- cement blocks and tiles factory. Since the report was written, fabrication of cement blocks, tiles, windows, doors, etc., as an input to the construction industry has expanded considerably. These are worked in iron, aluminium, and wood, and employ a considerable number of people.

As an input to the planning process, government projects in this field will need to be closely monitored.

4.5 MINISTRY OF INDUSTRY AND ELECTRICITY, UNDER-SECRETARIAT FOR INDUSTRY AFFAIRS, Industrial Firms Licensed in 1395(1975) and the First Quarter 1396 (1976), Riyadh: Ministry of Electricity and Industry, 1396(1976)

The list of licenses issued to commercial firms is given for Abha and Khamis Mushayt as a continuing series. The data enable the assessment of the pace of past growth of industrial and commercial investment in the two towns in the study area. Taken together with information that is being derived from the socio-economic and land-use surveys this data will assist in making projections as to the likely rate of growth in investment.

4.6 CENTRAL DEPARTMENT OF STATISTICS, MINISTRY OF FINANCE AND NATIONAL ECONOMY, Summary Results of Census of Establishments in the Kingdom, 1387(1967), 1395(1975) and 1396(1976), Riyadh: Ministry of Finance and National Economy. Now annual.

This document provides information on the number of private business establishments, and their employees in

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The census provides a record of the growth of commercial enterprises in the two towns of the study area. The series of statistics from 1387(1967) to 1396(1976) enables some measure of the pace of expansion of commercial activity over the past decade. The data will be updated as a result of the socio-economic and land-use surveys. Taken together these will enable the preparation of projections as to the future growth of businesses, and of their propensity to employ staff.

4.7 CENTRAL DEPARTMENT OF STATISTICS, MINISTRY OF FINANCE AND NATIONAL ECONOMY, Population Census 1394(1974) - Detailed Data Asir, Dammam: Altraiki Printing Press,

This document gives the results of the census taken in 1394(1974). It contains data on employment in the region by type, age-structure and nationality as at the time of census taking.

The population census provides an indispensable framework for planning in the study area. Nevertheless there are some problems in its use, in particular,

- it is now 4 years old,
- some important information is provided at Emirate rather than city level,
- age-sex information is not broken down by nationality.

The census will, for planning purposes, be supplemented by the results of the socio-economic survey which, in addition to providing information on the above specified subjects, will also provide a wealth of additional information. It will not, however, give very accurate revised population estimates: it is impossible with a 5% household sample to obtain a precise population figure, although a good indication will be obtained. It should also be noted that the census includes information for the military installations at Khamis Mushayt,

graphic analysis of existing conditions.

4.8 MINISTRY OF COMMUNICATION, Tihama Descents Phase I, Final Report, Rome: Italconsult, 1395(1975)

This study concerns the development of the rural road network of the Southern Region. The implementation of these roads will provide access to Abha and Khamis Mushayt from the now largely isolated villages below the escarpment.

As the served areas are outside the Abha Metropolitan Area, these road projects do not have a direct effect on Abha AMP, with the exception that some of the rural areas will have closer links to Abha and Khamis Mushayt.

4.9 MINISTRY OF AGRICULTURE AND WATER, Asir Kingdom Park, Wirth Berger Assoc., National Park Service (US Dept of the Interior), 1397(1977)

This exciting, imaginative and important project is included in the Five Year Development Plan and is in the course of realisation. It is in harmony with the stated government objectives of developing tourism in the region. The study includes plans for a number of visitor areas (at Sawdah, Dalaghar, Qarah and Abha itself) for all of which detailed studies have been undertaken. The planning studies will therefore include these areas as zoned for the Asir Kingdom Park, and planning for adjacent areas will need to take these into account. Other aspects that will need to be covered are visitor traffic to the Park that will be generated, and the need to accommodate those visitors that are from outside the region. Since some aspects of the Asir Kingdom Park plans are still under detailed study, close liaison with the Ministry of Agriculture and Water will be necessary so that these can be monitored as an input to the planning process.

4.10 GOVERNMENT OF SAUDI ARABIA, Summer Resort in Sawdah, Asir, Kingdom of Saudi Arabia, Zapco Ltd., Switzerland. 1395 (1975).

The Consultants have been given access to the detailed studies for the above project for a resort in the Sawdah mountains. This large project will potentially have considerable impact on the area under study in that it will represent a major construction activity covering a number of years, it will, when completed and in operation, be an important source of employment, and it will be an important contribution to realising the objectives of the government in developing tourism in the Asir region.

4.11 MINISTRY OF AGRICULTURE AND WATER, Development Surveys for Areas II and III, Final Report, Italconsult, 1389 (1969)

The report presents a comprehensive inventory of the grazing lands. The list of plants included in the report is helpful also for more detailed studies. The report also includes a description of the soils in the Southern Region and a classification of the lands. The soil survey and land classification, however, is just a brief description and cannot be used for more detailed studies. In the Abha Metropolitan Area only one soil profile pit was studied and no soil samples were analysed.

4.12 MINISTRY OF MUNICIPAL AND RURAL AFFAIRS, Reports on Sewage Disposal and Stormwater Drainage in Abha and Khamis Mushayt
J.D. & D.M. Watson, Consultants

Although produced and published as early as 1389 (1969) these reports still provide some interesting facts and points as regards the general conditions for sewerage and storm-water drainage in the two cities. The conclusions stipulated are to a great extent reflected by the projects currently being implemented.

Some recommendations are, however, not accomplished. These include the treatment technique - Watson proposed trickling filters as a second treatment stage but oxidation ditches were selected by the Ministry - and the more general observation that a proper water supply should be operating before a sewerage system is provided. "The lack of an adequate supply of water would result in the stranding of solids and very offensive conditions".

The recommendations on phasing of construction works are for natural reasons outdated. Although it was observed that a rapid development was foreseeable, the actual population growth is beyond the expectations. This is illustrated by the fact that the future population in Khamis Mushayt estimated by Watson was 30,000 in 1398 (1978) while the SPS socio-economic survey showed some 55,000 persons. Watson's estimate for 1405 (1985) was 35,000 whilst the SPS survey indicates some 91,000 persons in Khamis Mushayt for the same year.

Since the phasing of projects was based on the above mentioned population estimate, it is evident that the second stage of the treatment works may have to be constructed sooner than proposed.

Finally it may be observed that the pipeline network standards suggested do meet high demands for hygiene and security. The proposed approach for the disposal of stormwater - roads and streets are the main carriers of such water - is likewise interesting and does serve as guideline for the future planning in that it lays down a standard policy.

4.13 MINISTRY OF MUNICIPAL AND RURAL AFFAIRS,
"Improving the Management of Municipal Affairs"
McKinsey International Inc., Ramadan 1397 (August 1977)

McKinsey was appointed in early 1396 (1976) to study the organization structure of the Ministry, the Regional Offices and selected Municipalities.

The recommendations of the study comprise: (1) reorganization of the Ministry, to focus on policy development and overall programme control, rather than on detailed project supervision and service provision, (2) creation of strong integrated regional offices responsible for providing medium-size and smaller municipalities with the support that they cannot yet provide for themselves, and (3) delegation of authority and additional responsibilities to the municipalities, according to their capacity to absorb them.

In a circular dated 22.01.1398 (01.01.1978) the Ministry has, in the main, provided instructions according to the recommendations of the McKinsey reports.

This reorganization will enable a more efficient management of physical development, including planning, construction, maintenance and follow-up. The McKinsey reports have been utilised in the preparation of Report No. 2 of the Action Master Plan Project. Detailed evaluation and recommendations for the development of the organizational framework for the Abha Metropolitan Area has been presented in that report.

A further review of these reports is thus not regarded as necessary here.

4.14 TOWN RECREATION PARK PROJECTS AT MEDINA, TAIF,
ABHA FEASIBILITY STUDY, Studio di Architettura,
Franc Albini, Franca Helg & Partners. Studio
Prof. Pietro Porcinai. Milan July 1975.

The report presents a proposal for a Town recreation park, including an amusement park, in Abha, to be located west of the Abha dam.

It is stated in the report:

"The Asir region has many climatic advantages and natural attractions and the area proposed for the Abha park has the advantage of a very beautiful landscape, enhanced by the presence of a large lake. The park is not large but its size will in effect be increased by protective measures (afforestation) concerning the shores of the lake and the slope above for their maintenance in good condition. The conformation of the hills ensures that, when the vegetation has been developed, there will be a good ventilation even on the hottest days. The management of an amusement park of relatively small size and capacity cannot expect to be profitable. The Abha park is to be considered as part of a territorial program of development of the natural resources of the region and its utility lies not only in the service it provides to the local population but also in the contribution it makes to the development of tourism in the region."

An area has been reserved for the recreational park. No implementation has started so far, however. The need for a park of this kind is great and it will be considered in the Action Master Plan Project.