

CHAPTER 2

THE STUDY REGION: KUTCH DISTRICT

INTRODUCTION

Kutch is largest district of Gujarat with an area of 45652 square kilometers, which is about 23.29 percent of the total area of the State. It is a border district, having international boundary with Pakistan. The district has a very long coastline of 322 kms, about one-fifth of the total coastline of 1600 kms in the State. It also consists of hilly region with dry land farming. The district has a very vast amount of minerals deposits like lignite, bauxite, limestone etc that are boosting the industrial development presently and will help in further future development.

LOCATION AND EXTENT

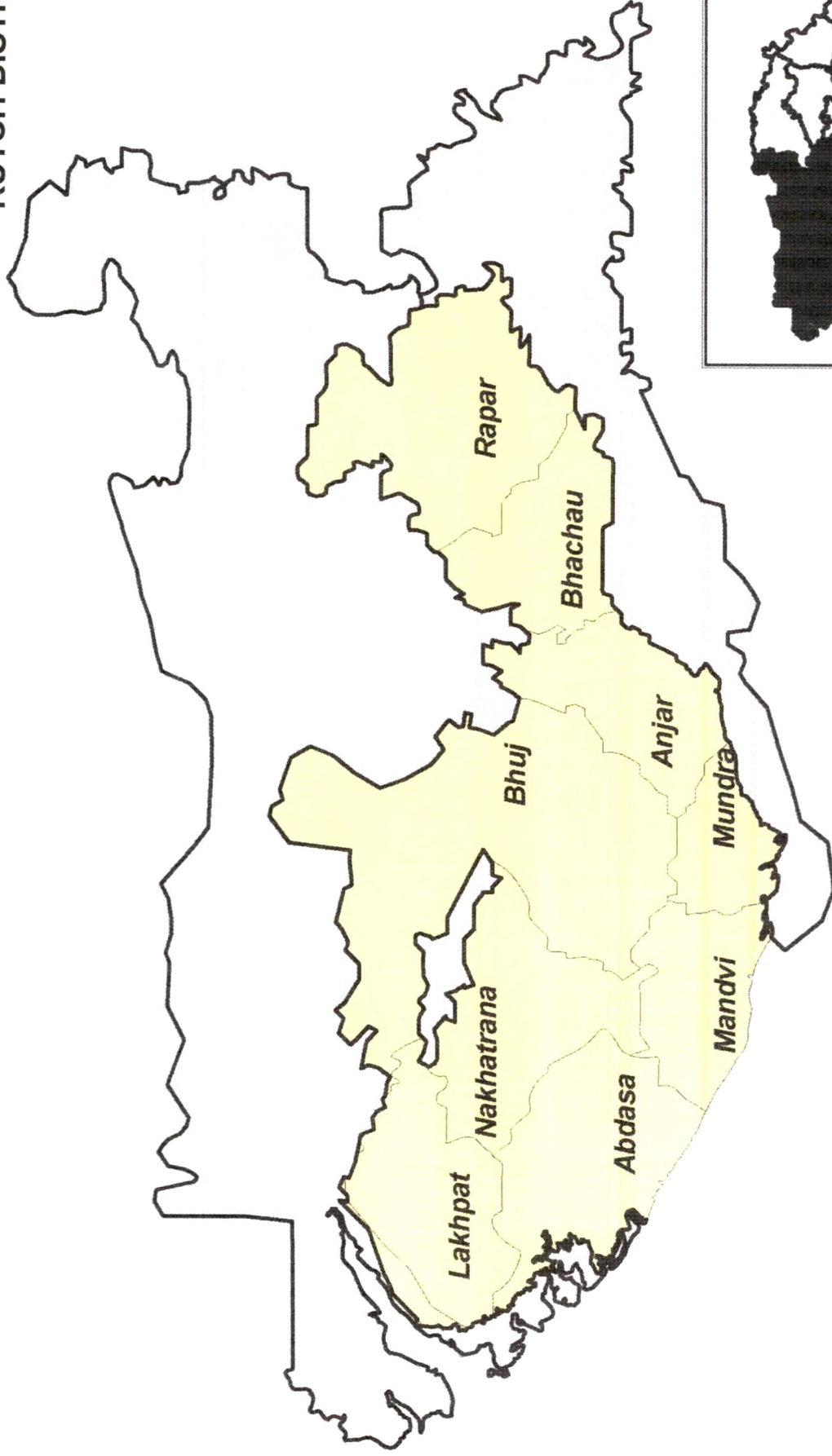
The Kutch district became a part of the Bombay state in November 1956, when the states were reorganised and the bilingual state of Bombay was formed with Vidarbha, Marathwada, Saurashtra and Kutch regions. The Bombay state was bifurcated on the 1st May, 1960 and Kutch become a part of the newly formed Gujarat state.

The district stretches roughly from 22°44'11 to 24° 41'25 north latitudes and 68° 09'46 to 71° 54'47 east longitude. It is bound on the north and as well as north west by Sindh (Pakistan), on the north east by Rajasthan, on the east by district of Banaskantha and Mehsana, on the south east by Surendranagar district, on the south by a Gulf of Kutch and the Rajkot district and on the south west and west by Arabian sea. The coastal area of Kutch district consisting of Lakhpat, Abdasa, Mandvi, Mundra, Anjar and Bhachau lies in the southern coast area. They share a common boundary on the south and face Gulf of Kutch. It is shown in the map showing the location of Kutch (Map No 1)

HISTORICAL BACKGROUND

Kutch is an ancient land possessed of great antiquity, its name originated due to its topographical feature resembling Tortoise. A crescent shaped region called Kachchh formed

STUDY AREA
KUTCH DISTRICT



SCALE
10 0 10 20 30 40 50 Kilometers



MAP NO. 1

part of northwest Gujarat, prior to the dawn of Christian era, the region lying between Sindh and Saurashtra has been described as Abhir in the Mahabharata. A Greek traveller and military commander also named this region as 'Abira' or 'Abir' corrupted from its original name of Abhir during the second century before the Christ. Till the third and fourth century A.D. and even thereafter, it was referred by both the names - Kachchh as well as Abhir, This name was from its original inhabitants, who were first to reside in this area. Lately, this area has been called Kutch because of its unique geographical location surrounded by water and waste land.

The present district was formed from the former native state of Kachchh and ten enclave villages of the former native state of Morvi. After 1947, it was a part 'C' state, administered by the Government of India through the Chief Commissioner. In 1956, states were reorganised and Kutch became a part of the Bombay state. Lastly, when the Bombay state was bifurcated on 1st May 1960 and separate states of Gujarat and Maharashtra were formed, since then Kutch district became a part of newly formed Gujarat state.

The district of Kutch attracted pointed attention after independence on account of the border dispute between India and Pakistan regarding the sovereignty over certain parts of Kutch district. On 30th June 1965, India and Pakistan decided to refer the boundary dispute to an impartial tribunal. They agreed that decision of the Tribunal would be binding on both of them and would not be questioned on any ground what so ever. A Tribunal was constituted with headquarter at Geneva, which heard arguments from both sides, examined the documents, maps etc. put forth by both sides and gave an award on 19th February 1968 which is embodied in the India-Pakistan western boundary case Tribunal. Accordingly, the work of the demarcation of the boundary by erecting pillars on the ground was undertaken in 1968 and was completed in June 1969.

PHYSICAL FEATURES

TOPOGRAPHY

Kutch district has a considerable topographic diversity as compared to the normally level surface of the most areas in Gujarat. Topographically, a peninsula is formed of east-west trending hill ranges of the mainland plateau, the Wagad upland and the Island belt. All hill ranges and the intervening low ground run parallel, this characteristic features indicate that the topography has been controlled to a large extent by the geological factors of faulting,

folding and lithology. The highest peak in Kutch is that of Kaladungar, 458 meter on the Pachchham Island. On the mainland, there are several peaks - the Nandunagar having maximum altitude of 430 meter, other prominent hill features like Dinodhar, Roha, Nanama, Khadir, Manjal Godipadhar, Gandhari, Nara, Kera, Rudrani, Gora dungar etc, shown in Map no 2.

The hill Ranges are in following rows:

First Row - Northern line or Rann ranges consisting of Ragheiralro, Khadinnvalo or Khadio, Bhanjdo (situated on bet), Pachchmai, Pranthalwalo (Dholo): Moghanio and Karodungar.

Second Row - Middle line Jogika Bhil, Piro, Karakas or Kanero, Dinodhar (1467 feet) Varar (1125 feet), Vichhio, Jhuron, Gandhari, Habai (1126 feet), Gholari (974 feet) and Kasva.

Third Row - Southern line Rohano Dungar (1871 feet), Nanamo, Dhavvo, Kirgiri, Chhadwa, Rakhal, Chaddwa dungar etc.

Other Prominent Hills

Nanama Hills – Located near village Mangwana (Nakhatran taluka), two rivers - Bhurad and Kharod have their origins in this region.

Mata Nu Math – It is located north west of Lakhpatt taluka. The River Nara and Kali, Khari flows from this hill.

Barandha Hills - Also situated in Lakhpatt taluka, Godhat River flows from here.

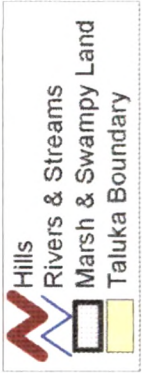
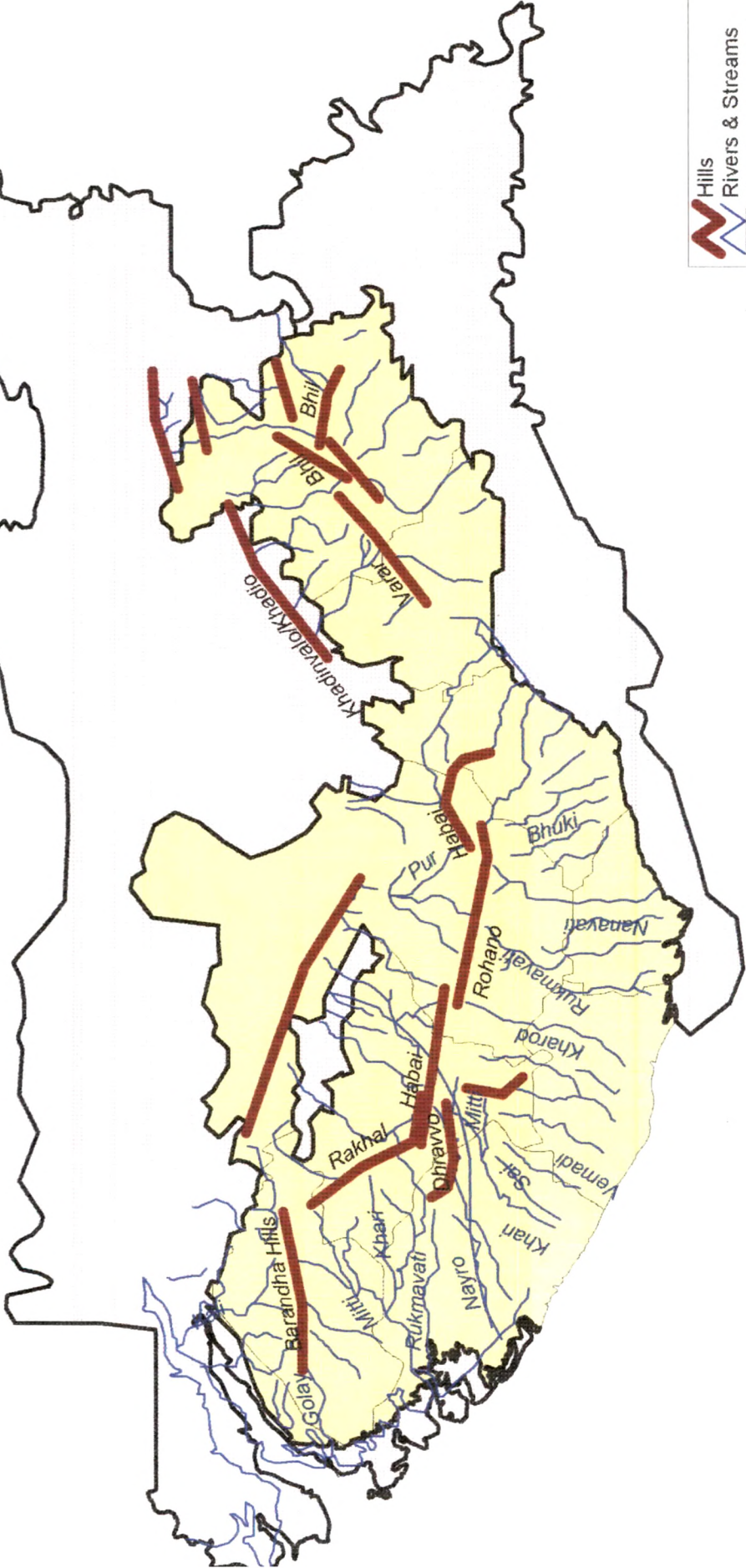
Khatrod Hills - Bhuki River starts from these hills in Bhuj taluka. There is another Bhuki river in Anjar taluka.

Black Hills-The Kala Dungar (Black Hills) the highest hills in Kutch (458 meter) stands out majestically as a sentinel of the Great Rann overlooking the vast area, as a silent witness to the thousand of years old history of Kutch. Due to security reasons, the Rann of Kutch is a restricted area for the public and foreigners are required to seek a special permission for a trip to the Great Rann.

DRAINAGE

This region is drained by around 100 ephemeral streams which rise from the central hill range and flow down, radiating in all directions. The peninsula is marked by closely undulating streams rendering the terrain of rugged topography. The landscape is formed of dominantly erosional, with flat topped hills and long stretching ridges and intervening broad open sand filled valleys.

Physiography



MAP NO 2



Broadly the rivers of Kutch can be classified as North flowing and south flowing. The north flowing rivers flow from the hills towards Banni and Great Rann. These are Khari, Nara, Suvi, Malan, Chang, Kuranali, Samatravali, Bhuki, Donwali, Netrawali, Kali

The south flowing rivers flow from the hills towards Creek and Arabian Sea. These are Rukmawali, Kharod, Sai, Kankawati, Mithi, Sakra, Lakadiwali Bhuki, Nagmati.

There are many river beds and streams in Kutch, which remain mostly dry but during the monsoon get flooded. Rains come once in three to four years. There are no perennial rivers in Kutch. Two main rivers are Bhuki and Khari. Almost all the rivers are ephemeral. They are shown in the map of Physiography. (Map No-2)

The Rain Drain Rivers (Taluka Wise) are:

Mandvi Taluka - Khari, Rukmavati, Kharod, Vingadi, Sai.

Bhachau Taluka - Saran, Khari, Chang, Kharo vango or Gupt Ganga.

Abdasa Taluka - Sari Kakavati, Nayro, Piyoti etc.

Lakhpat Taluka - Faliwali, Kali, Godhatawali.

Mundra Taluka - Bhadreshwarwali, Bhuki, Nagmati, Sonarwali.

Anjar Taluka - Burud, Suve, Malas, Sakra, Chang.

CLIMATE

The climate of the region is characterised by a high aridity index of over 40 percent, indicating high deficiency of soil moisture and desert type of dry xerophytic vegetation. The mean annual temperature is 26 c with mean maximum and minimum of 30 c and 10 c respectively and range of extremes is more than 44 c. The relative humidity is less than 60 percent. The average annual rainfall is 250 to 450 mm with dependability of less than 40 percent; total rainy days are less than 15. The average wind speed is 10-15 km per hour and the wind direction is West and North West during summer and monsoon and North during winter.

SOIL

The soils of the peninsula dominantly belong to Aridisol and Entisol orders. The soils of the hilly terrain are characterised by varying depth and textures. They are moderately alkaline and calcareous. They are moderately eroded and have surface stoniness. They are classed as Camborthids and Palargids. The soils occurring on undulating pediment surface are dominantly very shallow to shallow (10-15 cm), somewhat excessively drained and loamy in textures, severely eroded and generally stony on surface. The soils occurring on very gentle sloppy pediment surface are moderately shallow to moderately deep (50to100cm), well drained and fine loamy in texture. They are slightly to moderately alkaline, calcareous and eroded. They have been classed as Camborthids. In short, they are broadly divided into four types: Alluvial, Sandy, Swampy & Black clay or Loamy.

FLORA AND FAUNA

Kutch has no forest or jungles in the ordinary sense but can respond well to a managed forestry and ecosystem. Technically, however the forest in Kutch can be broadly classified in many types like the Southern dry mixed deciduous forest, Dry deciduous forest, Dry Savannah forest, Dry grassland, Southern thorn forest, Southern forest scrub, Mangrove forest, Mangrove scrub & Euphorbia scrub.

The erstwhile rulers of Kutch marked certain forest as "Rakhals" which are now known as Protected and Reserve forests. There are fifty six rakhals in Kutch. The forest department has drawn and demarcated certain areas in north and west of Kutch and termed them as wild life sanctuaries. The total area covered under forestry is about 286,774 hectares. The Kutch forests are characterised by thorny and non thorny tree growth. Locally, the names given to the thorny varieties are Bawal, Kher, Kando, Angario, Guggal etc, while the non thorny scrub and trees constitute Jal,Akdo, Gangi, Gundi, Neem, Siras, Lai etc.

FLORA OF KUTCH

Kutch has semi desert type of hardy vegetation. There are varieties of Acacia trees like Acacia Senegal, Acacia Leucophloea, Acacia nilotica etc. The mesquite is an exotic leguminous plant which grows in the wild regions. The wild exotic plants are considered a menace. These are alien in origin and were brought from South America and were initially grown to prevent soil erosion and the spread of desert. These are known as "Gando Bawal" locally. The prosopis Julifora was considered to be more of nuisance value but some entrepreneurs in Kutch have found immense use of pods as cattle feed. The coastal saline belt has some halophytes species like Suaeda, Sporobolus etc, whereas the muddy creek areas are full of mangroves like Avicinnia Marina, Avicinnia Officinal and Rhizophra Mukronata.

One of the best fodder providing trees called Kao-Babul is grown in Kutch has better nutritional value compared to Barseen the green fodder. The pods of Kao-Babul contain rich amounts of protein. Several other types of fodder are grown separately for camels, buffaloes, cows, sheep goats etc.

It is possible to plant a variety of trees, shrubs, creepers and bushes in Kutch which can meet the requirement of human beings and animals. The Bougenwilla grows freely and with very less water and provides everlasting beauty. The forest area and distribution of marshy and swampy land have been shown in the Map No-3 ,it shows Abdasa have highest area under forest.

DISTRIBUTION OF FLORA

Kutch flora can be roughly divided into four types:

The coastal area vegetation

Central hilly and Dry deciduous zone vegetation

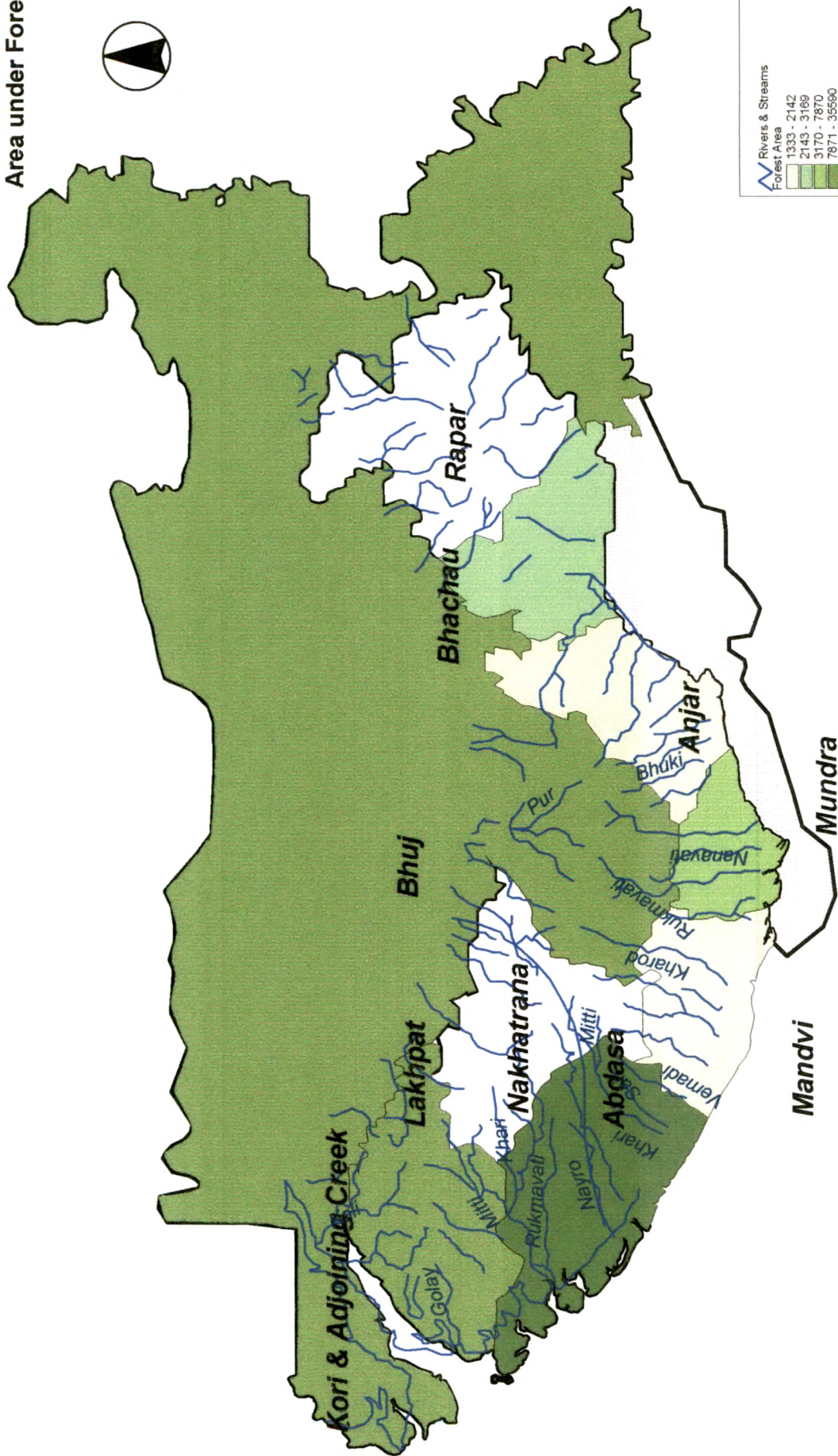
The Banni Zone

Grass

Coastal Zone:

There are many varieties in this area, locally called as Dariya. The main flora is as follows:

Khajur/Kharek -Phoenix sylvestris



10 0 10 20 30 40 50 Kilometers

MAP NO 3

Map : Forest Area						
NAME	RFAREA	RFVILLAGE	URFAREA	URFVILLAGE	T_F_AREA	T_F_VILL
Mundra	7870	20	625	4	5495	24
Mandvi	1333	6	6143	27	7476	33
Bhuj	30257	58	26093	31	56351	89
Abdasa	56169	7	12762	37	18932	44
Lakhpat	35590	41	19890	23	55481	64
Anjar	2142	7	1682	5	3824	12
Bhachau	3169	3	14736	15	17905	18

RFAREA = Reserve Forest

RFVILLAGE = Reserve Forest Village

URFAREA = Unreserved Forest Area

URFVILLAGE= Unreserved Forest Villages

T_F_Area = Total Forest Area

T_F_VILLAGE = Total Forest Villages

Daryayi Khip - *Leptadenia Sparitium* (wild, not cultivated)

Saru - *Cassuarina Equisetifolia*

Daryayi kans - *Halopyrum mucronatum* (wild)

Neem or limdo - *Melia Azadirachta*

Aval, Bor, Coconut, etc.

Hilly Zone:

The varieties included are:

Gando Bawal - *Prosopis Julifora*

Desi Bawal - *Accacia Nilotica*

Khijdo/Kando - *Prosopis Cineraria*

Khakhro - *Buteq Frondosa*

Jar or pilu, Thor, Neem, Aual, Ambli, Aritha, Jambu/Jamun, Gugal, Piplo, Lai, Vad, Bor or Ber.

Banni Zone:

Gando Bawal, Desi bawal, Kerdo Keri etc.

Banni Grass:

Several varieties of grass called 'Gha' in local language grow in Banni. There are about 28 varieties of grass in Banni, some of the varieties of grass are called Valp, Baru, Phulio, Khari, Kanj, Vans etc

MEDICINAL PLANTS

Kutch is a store house of medicinal plants. They are found in the hilly areas, deciduous forest area, riverbeds etc. One palace in Bhuj and Vijal Vilas palace in Mandvi is maintained as botanical gardens.

Local Name	Botanical Name
Dudhal	Euphorbia
Hanj	Buettneria Herbacea
Gugal	Balsamorendrum
Akdo Somvel	Brahmi, Neuri, Kadwa Turia, Tulsi, Bangro, Sannepat, Fox glove etc.

FRUITS AND VEGETABLES

The local fruits grown in Kutch are the Dates (kharek), mango, coconut, guava, chikoo, pomengrate, citrus Fruits, mosambi, papaya, banana, bor or ber (Zyzyphus), mostly in wadis of Mandvi and Mundra. The grapes are grown on experimental basis, but not on commercial basis.

Vegetables which are grown are carrot (Daucas Carota), dhana or dhaniya (Corrindrum savitum), bhajmo or lehsun, reengna or baigan (Solanum melongana), bhindi or bhinda (Hibiscus), jayphal (Sida Humilis), kakdi (Cucumis Sativa), tinda, tarbuj (Citrullus), turia, onion, sarson, karela etc.

FAUNA

There are two important wildlife sanctuaries in Kutch notified by the Government of Gujarat. One is the Kutch desert wildlife sanctuary in 1986 spread over an area of 750,622 hectares of land, which falls in Rapar, Bhachau, Anjar and Bhuj taluka. The above sanctuary includes the Great Rann of Kutch besides the part of wild ass sanctuary of Dharghandhra which is in Little Rann of Kutch. The other notified sanctuary is the Narayan Sarovar Sanctuary in Lakhpat taluka. In 1981 an area of 765 square kilometer was notified as sanctuary, which was reduced to 442 square kilometer.

The arid land, vast saline deserts, creeks and the long coastline provides for a wide variety of its own wild life besides attracting a number of migratory Avi-Fauna. Some of the distinguish wild life found in Kutch is as follows-

Mammals:

The Chinkara deer (Gazella Gazella or local name chinkaru), the wild ass found near the little Rann, Neelgai or Blue Bull, wild Boar or jungli budhar, Indian Wolf, Jackal (Canis Auresug) or Bhiyad, striped Hyaena (Hyaena Lyonna) or Jharak, Desert Hare or Salsa, Indian fox vulpes or Lonkadi, Mongoose or Nolia, besides some jungle cat, Pangolin, Indian Porcupine and long eared Hedgehog are also found. The Indian Hare is very commonly seen in open fields, but the rarest animal is the Caracal.

Reptiles:

Many species of reptiles including snakes are found in Kutch. Some of these are common Crocodile Mugger, Monitor lizard, Spiny tailed lizard or Sanda, matt-tailed lizard known as Khann, Starred, Tortoise, Fresh water Turtle etc.

Snakes:

Amongst the common species of non-poisonous snakes which are seen are Python, Sand Boa, Rat snake, Royal snake, while the poisonous snakes are the Black Krait, Black Cobra, Russels Wiper, Saw Scales Viper, Sea Snake etc.

Amphibians:

Many species of frogs and toads are found in Kutch.

Birds:

This district is known as Bird watcher's paradise. Besides the migratory birds flocking in thousands, there are many varieties of resident birds which include the doves, storks, koyal, bulbul, herons, eagles, desert lark, weaver birds, crow, sparrow, Ibis, white nipped tits, flamingoes, peacock, sand grouse, egrets, Robin, owls, vultures and a host of other birds including the Great Indian Bustard.

Many migratory birds like the sea gulls and white storks visit Kutch, the ducks come from Siberia. The flooded wetlands of Banni provide a congenial habitat for the avifauna and other wild life. The most famous bird of course, is the greater flamingo and the lesser flamingo, a resident bird seen throughout the year. The water birds are seen in plenty belonging to family Analidae, mainly the Goose, teal, ducks etc. The great Indian Bustard is one of the rarest birds in India, known as GIB or tiller, belonging to family of Otidae. Kutch is the only district in Gujarat where a few of species still survive; hardly any birds now remain in Saurashtra. However, there is uncontrolled growth of Gando Bawal, and the Rann is slowly invading the grassland of Banni, increasing the salinity towards the southern fringes of Rann.

HUMAN AND ECONOMIC FEATURES

DEMOGRAPHIC STRUCTURE

According to population census 1991, the district had registered a population 1262,507 persons, which is 3.1 percent of the total population of the state. This is ranked fifteenth among nineteen districts of the state in respect of population. The population was divided as 642,823 males and 619,684 females. Thus the gender ratio of population of Kutch, according to 1991 census is recorded at 964 as against 934 for the state as a whole. The population census was not conducted in Kutch district in 2001.

POPULATION GROWTH

The exposition of the population growth figures of Kutch since 1901 reveals that the population of the district has increased almost three times during a period of 90 years i.e. from 1901 to 1991. On an average every year around 21000 people are added to the population of the district creating a demand for additional resources for clothing, housing, food, education, health, schooling etc. The rural population of the district has increased 3.89 lakhs to 8.75 lakhs, a little over two times, whereas the urban population has undergone an accelerated growth by registering an increase from 99 thousand to 3.89 lakhs in 1991, an increase of about four times during a passage of ninety years.

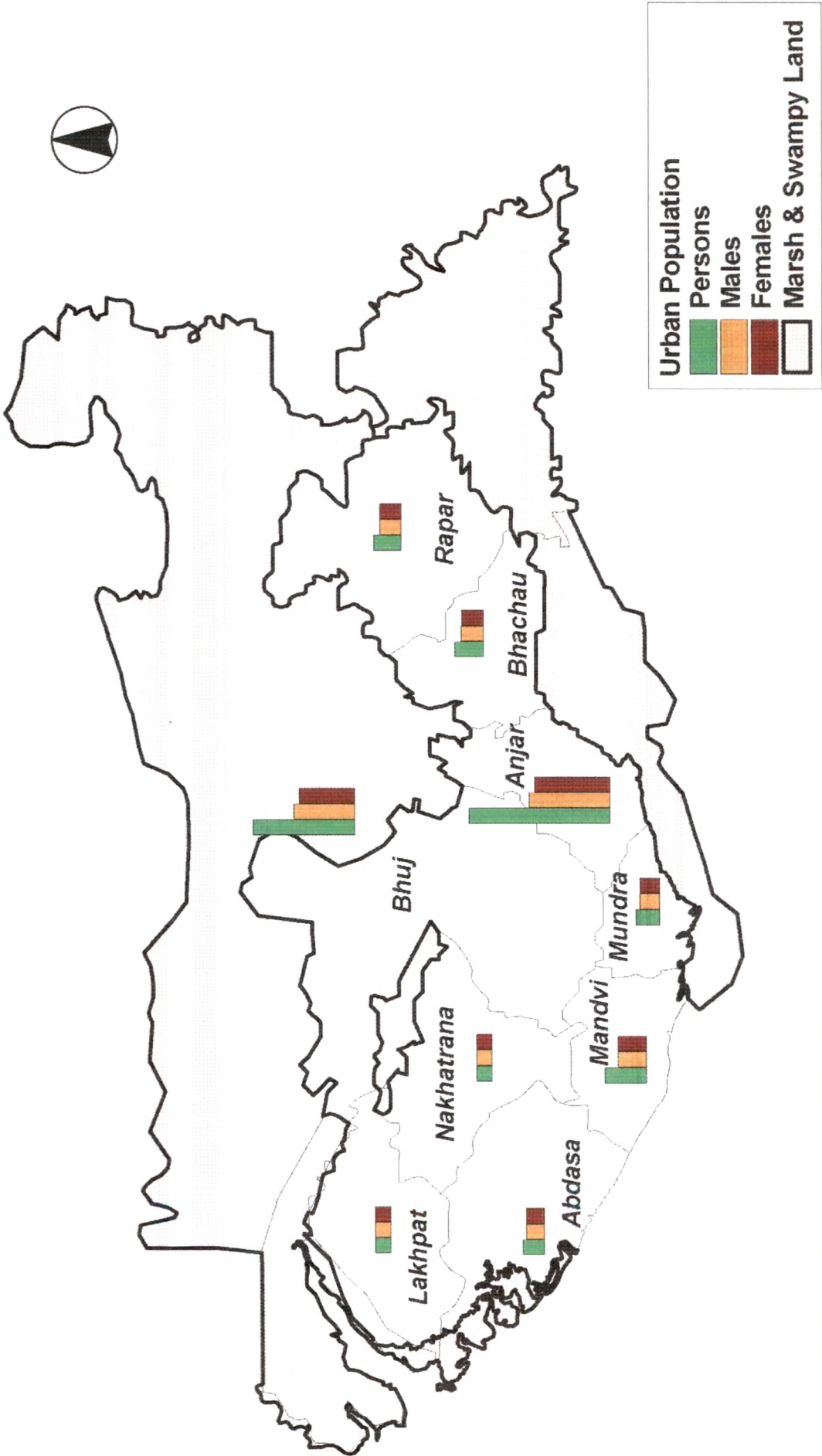
RURAL-URBAN COMPOSITION

According to 1991 census, the population in rural area was 874,650 where as it was 387,857 in urban areas of the district. Thus, 69.28 percent of the population of the district resides in rural areas of the district as against 65.51 percent in the entire state. The rural and urban population of the district is 3.23 percent and 2.72 percent respectively of the total rural and urban population of the state. The district ranks sixteenth in respect of rural population and eleventh in respect of urban population among the nineteen districts of the state shown in the map (Map No-5 and No 4 respectively).

DENSITY

The population density in Kutch has increased from 23 persons per square kilometer in 1981 to 28 persons per square kilometer in 1991. This is significantly lower than that for the state

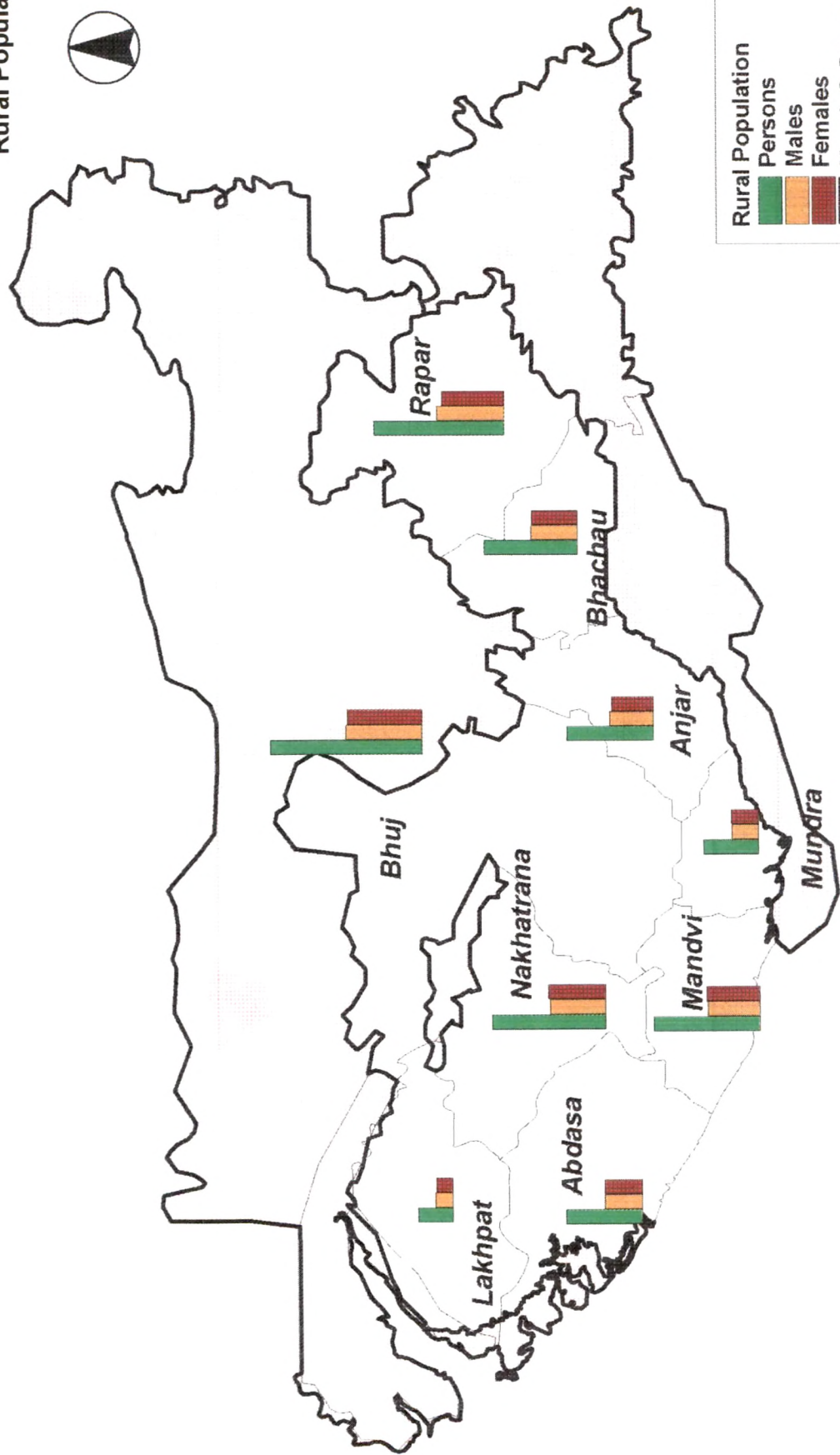
Urban Population



MAP NO 4

Map : Urban Population			
NAME	PERSONS	MALES	FEMALES
Mundra	11652	5927	5725
Mandvi	36636	18256	18380
Bhuj	121009	64231	56778
Abdasa	8105	4075	4030
Anjar	175581	92010	83571
Bhachau	18408	9683	8725
Rapar	16466	8362	8104

Rural Population



Rural Population

- Persons
- Males
- Females
- Marsh & Swampy Land

MAP NO 5

SCALE

10 0 10 20 30 40 50 Kilometers

Map : Rural Population			
NAME	PERSONS	MALES	FEMALES
Mundra	57000	28114	28886
Mandvi	109398	54075	55323
Nakhatrana	116944	57624	59320
Bhuj	156206	78867	77339
Abdasa	78297	39074	39223
Lakhpatri	36759	18807	17952
Anjar	89644	45653	43991
Bhachau	96351	48467	47884
Rapar	134051	69598	64453

which was 211 persons per square kilometer, mainly due to the unpopulated vast Rann area in the district.

DEVELOPMENT PLAN

During the princely days, there were 'Jagirs, Imams, Khalsa who looked after the local village administration and people were required to pay Lagan or Kar or taxes to them. However, there was no legal authority to govern. This changed after independence as the development funding is through rural development plan and urban authorities. The Kutch Rural Development Agency has various schemes; the important ones being Integrated Rural Development Programme (IRDP), TRYSEM or Training for Rural Youth Self Employment, DWCRA or the Development of Women and Children for Rural areas, JRY or Jawahar Rozgar Yojana, EAS or Employment Assurance Scheme, IWDP or Integrated Wasteland Development Programme, Gokul Gram Yojana and the Watershed Development Programme.

AGRICULTURE

Kutch like other districts of Gujarat, agriculture happens to be the main source of subsistence for the majority of people. According to 1991 census 52.18 percent of the total main working population of the district was engaged in agriculture as against 56.29 percent in the state as a whole and from the total number of persons actively engaged in agriculture 51 percent were cultivators of land and 49 percent were agricultural labourers. The agriculturists mainly come from Oswal, Jain, Bhausale, Rajput, Ahir, Harijan and Khoja communities.

The northern part of the district is dominated by desert and sandy soils which are mainly salt affected soils. Than proceeding southwards ,the interior area is composed of either sandy or medium black soils. The southern part of the district comprising the coastal area around Mandvi and Mundra has saline soils suitable for cultivation. The central portion is hilly and rocky with strips of cultivable land along the lower slopes .The soil is poor but due to better underground water current in their part the irrigarion facilities are adequate. The eastern part is mostly plain with some rocky patches where the soil is sandy with clay and alluvial loam in some parts. In the Western part the soils are mostly sandy with patches of fine sandy loams having no scope for Well irrigation.

IRRIGATION

Irrigation is a fundamental necessity for the development of agriculture. In Kutch rain is inadequate and irregular averaging 30 to 40 cm in a year with a recorded minimum of 3.5 cm only. In 1991 the district received only 9 cm of rain. The river all of them are disappointing as none seems to be perennial. For this reason the little rain which the monsoon brings has to be properly stored and well preserved.

Meanwhile the irrigation department has made efforts to take up several minor and medium irrigation projects during the five years plan. The minor irrigation projects numbering more than a hundred are handled by Panchayats and medium projects by the irrigation department. There are about 165 minor irrigation schemes in Kutch including minor dams and catchment areas. Out of these 23 minor dams constructed before partition. By 1951 there were 74 irrigation schemes. There are about 20 medium irrigation schemes out of which four medium projects were implemented during the first five year plan and the rest in subsequent plans. In addition there are about 80 minor irrigation schemes. As per Directorate of Agriculture Gujarat state report of 1993-94 the total gross area irrigated in Kutch is 123200 hectare out of which the net area irrigated amounts to 88900 hectare. There are 67 canals and 822 Wells and Tubewells.

BANKING, TRADE, COMMERCE

Banking- The district of Kutch is undergoing a satisfactory progress so far as the banking services are concerned, as it is clear from the number of scheduled commercial banks including regional rural bank offices has been increasing significantly. There were only 12 bank offices in the district in 1962, which have increased to 167 as on June 1995. These scheduled/commercial banks have registered a deposit of Rs 1589 crores and a credit of Rs 181 crores with a credit deposit ratio 11.4. The number of bank offices in Kutch constitutes about 4.8 percent of the total bank offices in the state as on 30th 1995 and the number of bank offices per lakh of population in 1995 works out to about 14 which is higher than corresponding state level average of 11 during the same year.

Trade and Commerce

Before partition of India the city of Karachi was the main trading center for India in the west besides Bombay. Now Kandla near Gandhidham has been developed into a major international port. A free trade zone at Kandla has become a special attraction for trade and isolated rocky hill bearing a long history. When we talk of economy of Kutch we normally think of conventional types of trades which flourished in the past and which are generally based on livestock, agriculture, craftsmanship and of course the age old maritime and fishing trade. The mineral based economy was earlier never thought of but now the economists and geologists think of mineral based economy as most promising for the economic upliftment of Kutch. The value of hidden treasure is now slowly attracting the entrepreneurs who are globalising the economy of this so-called 'Barren' land. Even the vast Rann is not a 'wasteland' as it has immense resources waiting to be exploited.

CONCLUSION

A general review of the study region that means coastal parts and as well as Kutch district as a whole, shows that the district has a prominent place in the map of India, not only because of its long international border, but because of the upcoming large industrial houses establishing their base in this part and contributing in making the district "A gateway to North". The status of land use and recent development undertaken would further illustrate that this will be more than average developed district in the near future, condition being that all natural disaster like cyclone and earthquake give mercy to this area, because these disaster have wiped out all the development in the past and that is also the important reason that all big houses avoid development in this zone earlier.

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