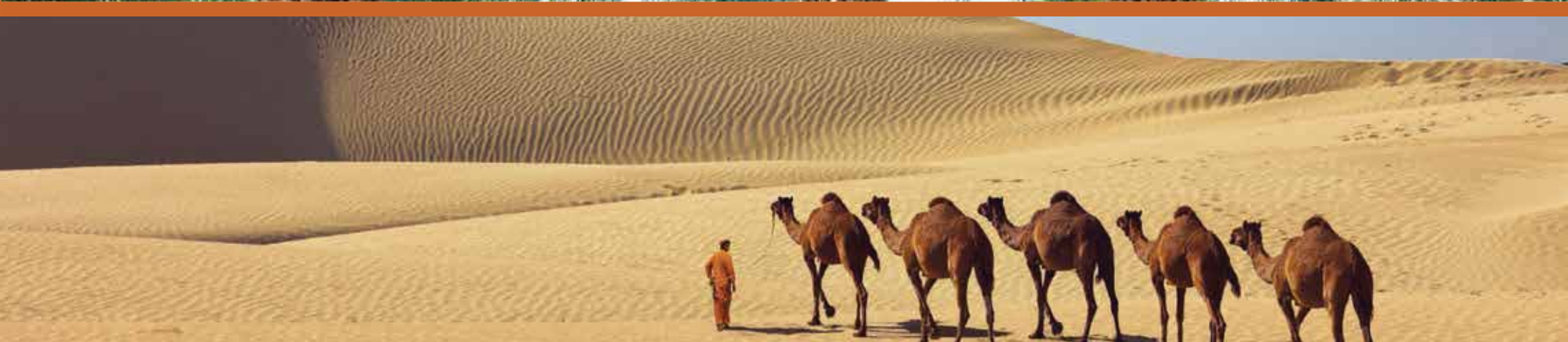




Food and Agriculture  
Organization of the  
United Nations



# LAND COVER ATLAS OF PAKISTAN

## *The Balochistan Province*

A joint publication by FAO, SUPARCO and Crop Reporting Service, Government of Balochistan

This publication has received funding from





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FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS  
Rome, 2017



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ISBN 978-92-5-109827-1

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## FOREWORD

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The Government of Pakistan, with support from its cooperating partners, has initiated a comprehensive program to address the improvement in agricultural statistical reporting utilizing auxiliary data from Earth Observation satellites.

The project: *Agricultural Information System - Building Provincial Capacity in Pakistan for Crop Estimation, Forecasting, and Reporting based on the integral use of Remotely Sensed Data; GCP/PAK/125/USA* focuses on enhancing and improving current systems based on the integral use of remotely sensed data into the existing data collection, analysis and dissemination systems; as well as the development of complementary systems to validate the use of remotely-sensed satellite data for area estimation and yield forecasting.

In this respect, the land cover mapping aspect was considered as a critical component of the area frame development and evolution. Many agricultural applications require detailed, updated, reliable and accurate baseline on land cover to support spatial monitoring and to evaluate ecosystem and landscape dynamics. Particularly in agriculture, a reliable land cover model of the present status at land utilization can significantly assist the development and support statistical applications. Due to its importance the project supported the development of a harmonized land cover database. The land cover atlases of Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan provinces & Federally Administered Tribal Areas have been developed and the series will be continued to provide a complete coverage of the country.

The area frame development provides a statistical robust, cost-effective tool to monitor agriculture in the country at federal and provincial level. FAO with the project partners, the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) and the Crop Reporting Services (CRS), have successfully developed and integrated the land cover database information, derived from remote sensing, into a procedure for crop area estimation (area frame sampling).

The process involves the following key steps:

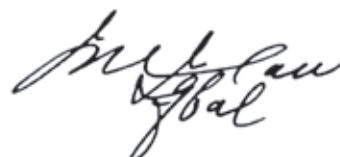
- **STRATIFICATION:** The land is divided into homogeneous entities or strata using the updated land cover database, generated using the FAO Land Cover Classification System (LCCS).
- **MULTI-STACK/PHASE SAMPLING:** Within each stratum, the land is further divided into sampling units or segments and a sample of segments selected for a field survey.
- **ANALYSIS:** Statistical analysis is conducted based on several decisions e.g. land cover strata definitions, number of substrata, size of the sampling units, the allocation of the sample to the strata and the method of selecting the sample. These decisions will have an appreciable impact on the statistical and cost efficiency of the final result.

Moreover, the land cover assessment and monitoring of its dynamics, whilst critical for area frame development, are also essential requirements for the sustainable management of natural resources and represent a fundamental baseline to support the government institutions in developing several activities linked to the improved monitoring and management of agricultural land. The multipurpose land cover database so produced is an important and harmonized baseline of agriculture in the country.

The provincial land cover database of Balochistan is created using a number of data sources ranging from remote sensing satellite imagery at 5 meters resolution or better, available historical digital datasets and in-situ data. The FAO Land Cover Classification System (LCCS) was used for the creation of the national legend in consultation and inputs from the national experts. The FAO methodology for land cover change mapping was implemented using FAO land cover change mapping toolbox. FAO provided substantive technical assistance to the national experts to undertake a consistent assessment of the land cover in Pakistan.



John S. Latham  
Senior Land and Water Officer



Imran Iqbal  
Member  
Space Applications & Research



## ACKNOWLEDGEMENTS

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The publication of the *Land Cover Atlas of Pakistan - The Balochistan Province* is the result of the outstanding efforts of many institutions and individuals working in close partnership. The following paragraphs attempt to acknowledge everyone who supported and contributed to this atlas.

The *Land Cover Atlas of Pakistan - The Balochistan Province* was made possible by the contributions (financial and in-kind) of the partner organizations involved in the project *Agricultural Information System - Building Provincial Capacity in Pakistan for Crop Estimation, Forecasting, and Reporting based on the integral use of Remotely Sensed Data; GCP/PAK/I25/USA* the Government of Pakistan, the Food and Agriculture Organization of the United Nations (FAO) and the United States Department of Agriculture (USDA), which funds the Project.

This activity was implemented in collaboration with Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), Directorate Crop Reporting Service (CRS), Balochistan and other relevant stakeholders in Pakistan. The national experts from SUPARCO and the CRS were trained on the methodology and tools to create, manage and analyse the land cover database.

FAO has worked closely with the Pakistan partners to:

- produce a detailed and harmonized national land cover database, which provides reliable and updated information on the distribution of the land cover classes to support a multiplicity of applications, but in particular it will foster an improvement in the area frame development, improved sample selection and allocation and refinement of the sample size as it implicitly creates a stratification of the province suitable for rationalization of the sampling strategy;
- strengthen the national capacity to undertake land cover and land change analysis using standards, remote sensing and GIS technology and integrate in-situ data with the earth observation data;
- prepare the draft and final Atlas of Balochistan Province land cover;
- use the outputs of these activities to support informed decision making at various levels.

We acknowledge the cooperation of the following institutions and experts for their support in the process of development of the Pakistan land cover (image interpretation and classification, field verification, dissemination and uptake, image processing, photo-interpretation, database creation and map production). The SUPARCO team involved in the project was led by Imran Iqbal comprising Shafiq Ahmed, Jawed Ali Qureshi, Arshad Ali, Asmat ullah, Raheel Ahmad, Atif Shahzad, Syed Farhan Ahmed Khalil, Mudassar Umer, Fahad Ahmed, Hafiz Uzair Ahmed Khan, Masuma Fatima, Aimen Fatima Ahmed, Zafar Jamil and Hasan Shahab. The Pakistan FAO representative Patrick Evans, the FAO office in Pakistan supported the implementation of the land cover mapping project. The FAO HQs team was led by John Latham, with support of Antonio Di Gregorio and Emanuela De Leo. The contribution of all of the above, along with input from many other unnamed people, has been vital for the success of this project. The preparation of the land cover atlas for publication has been led by Lucia Moro (Graphic Design) and Francesca Pretto (Database).

The effort of the photo-interpreters group and of the field work team from SUPARCO and CRS who undertook field validation activities by travelling extensively under difficult circumstances in the most remote areas of Pakistan is highly appreciated.

Thanks are also due to the staff of SUPARCO who generously allowed access to their high resolution imagery.

The entire land cover update would have been very difficult, if not impossible, without the leadership and oversight of Imran Iqbal (SUPARCO) and John Latham (FAO).



## INTRODUCTION

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This *Land Cover Atlas of Pakistan - The Balochistan Province* provides a comprehensive description of the biotic and abiotic resources of the province and includes, inter alia, numerous categories of cultivated land; natural vegetation and non-vegetated areas including bare and rocky areas, and areas of human settlement. The LCCS approach also captures the physiographic characteristics of the region.

Twenty four officials from the Crop Reporting Services of Balochistan, Punjab, Khyber Pakhtunkhwa and Sindh provinces, as well as SUPARCO staff attended the training organized by FAO, from the 12th to the 23rd February 2012 at SUPARCO office, Islamabad. The emphasis of the training was to apprise the stakeholders of the significant benefit of the LCCS approach as well as to train Pakistani counterparts. At the conclusion of the training, and in consultation with all the stakeholders, it was decided to adopt the LCCS methodology. It was determined that the land cover database would assist not only the development of a robust statistical area frame methodology but would also be the basis for the development of an improved capacity for natural resources monitoring and management in Pakistan.

The legend has 13 main land cover classes which have been further subdivided into 38 classes. Mapping was performed based on the analysis, interpretation and validation of SPOT-5 very high resolution satellite data (5 meter). The SPOT-5 satellite images were segmented into homogeneous polygons and labeled using the LCCS classification system and adopting the FAO methodology and its land cover toolbox. A seamless and detailed land cover database has been created that lays the foundation of future detailed land cover monitoring strategies in the country.

In addition to improvements in agricultural statistics and agricultural monitoring, other thematic beneficiary areas include forestry, environment, irrigation, disasters, hazard monitoring, planning & development, geological surveys and wild life habitat assessment.

This volume of the national atlas pertains to the province of Balochistan, Pakistan. The atlas is illustrated at a district level, providing land cover information in aggregated and cartographic form as well as tabular statistics per class per district for the province.

## BACKGROUND

SUPARCO, in collaboration with FAO, undertook land cover mapping of Pakistan to assess the extent of cultivated land and their associated changes over time. Land cover maps of Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan provinces as well as Federally Administered Tribal Areas have been produced using the FAO Land Cover Classification System (LCCS), which is an important component of FAO's land cover initiative designed to create a harmonized and extensive representation of land cover features of a single country and between countries.

The main objective of land cover mapping is to respond to the need for standardized and harmonized land cover data, for developing a common integrated approach in conformance with UNCED (United Nation Conference on Environment and Development) agenda.

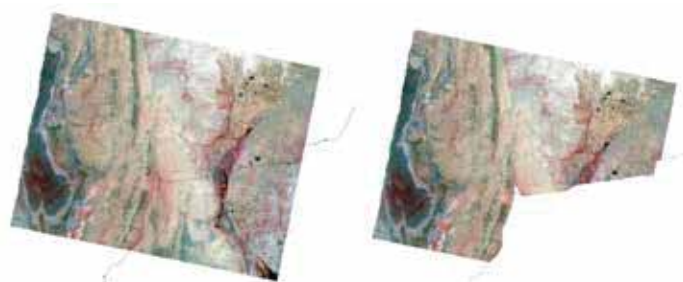


Figure 1. Image acquisition and pre-processing.

## METHODOLOGY

Satellite Remote Sensing (SRS) offers a flexible, cost effective and an efficient means for monitoring and mapping natural resources and man-made infrastructure. Significant improvements in the spatial, spectral and temporal resolutions of satellite data in recent decades have enhanced the usefulness of this technology for land cover mapping and its subsequent utilization. The production of maps is based on a detailed methodology which is as follows:

### 1. Image acquisition and pre-processing

SPOT-5 imagery was utilized to map land cover of Balochistan, Pakistan. The imagery was analyzed with respect to cloud cover percentage and image quality. Pre-monsoon scenes of the years 2010 - 2012 were selected to map the land cover, keeping in view a recurrence of any major floods.

All images were geometrically corrected to UTM projection following which orthorectification was performed. The images were then sub divided into the desired area of interest and reprojected

to Mercator projection. Subsequently, the images were pan-sharpened to 5m spatial resolution for land cover mapping.

### 2. Image processing and interpretation

#### 2.1 Segmentation

Segmentation is the process of grouping of similar pixels to simplify the image into meaningful pixel groups (i.e. segments or objects). Image segmentation provide layer of polygons based on spatially continuous and spectrally homogenous regions or objects. Each segment represents regions with similar pixel values with respect to some characteristics such as color, intensity or texture. For land cover mapping, segmentation helps in developing cluster pixels that belong to same land cover class.

For the purpose of Land Cover Atlas development, segmentation was performed using Definiens software. Multi-resolution segmentation approach was implemented to perform segmentation at the scale ranging from 35 to 55 depending on the complexity of the image. In addition, compactness was set to 0.9 and shape to 0.1 to get more homogenous segments.

#### 2.2 Image interpretation

Image interpretation is the process of identifying and delineating useful spatial information and labeling of the image object using land cover legends and ancillary information. The FAO's Mapping Device Change Analysis Tool (MadCat) was used for the creation of land cover database using the remote sensing imagery and the LCCS legend to assign the land cover class label of each polygon.

In order to assure interpretation consistency inside the same mosaic, a block of contiguous scenes (a sub-mosaic) was assigned to each interpreter. Photo-interpretation of the scene was carried out at 1:25000 scale, taking care of the matching between scenes belonging to the same sub-mosaic. Topology was checked and confirmed after completion of interpretation. Subsequently, the original segmentation of interpreted scenes was dissolved keeping a copy of the full resolution interpretation.



Figure 2. Segmentation.



Figure 3. Image interpretation.

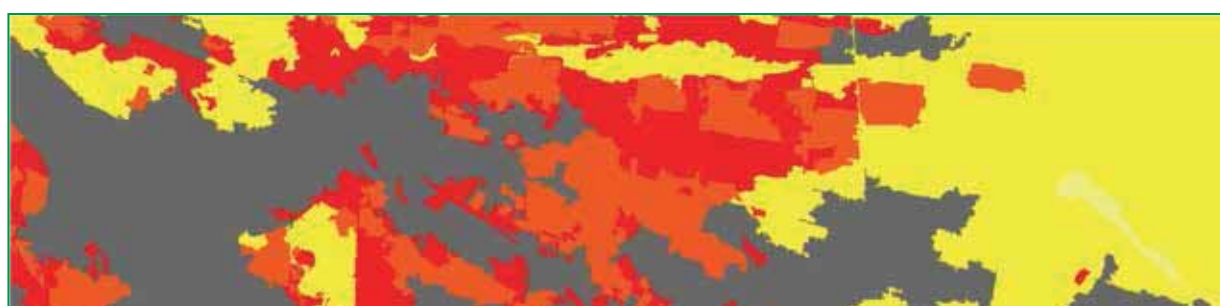


Figure 4. Image interpretation result.



### 2.3 Intermediate supervision process - Quality control

A team of two interpreters undertook an independent quality control of the database. The team checked the dissolved segments of each working area and highlighted the errors. Where errors were identified or the interpretation did not attain a minimum standard and/or contain non coded polygons, the quality control supervisor was authorized to reject/sent back the scene/ mosaic for re-interpretation.

After the errors were removed by the photo-interpreter, the corrected scene/mosaic was again forwarded to the Quality Control supervisor for final check. Furthermore, the process was repeated again if errors still existed.

After the quality check, edge matching of the dissolved tiles was carried out between same sub-mosaic and bordering mosaics.

### 2.4 Field validation

On completion of the interpretation phase, field survey was conducted by SUPARCO officials to validate the image interpretation and to remove the ambiguities related to land cover classes based on detailed field surveys. For each survey point, the land cover type and the coordinates were recorded using GPS system.

### 2.5 Evaluation

After the completion of interpretation, a quality check and final edge matching was undertaken and the end product was submitted to FAO, HQ for final evaluation of the land cover database.

### 2.6 Data harmonization and final database generation

As a final step, the land cover data was thoroughly reviewed and harmonized to create a consistent land cover database, minimizing difference from the subjectivity of different interpreters.

Finally, detailed topology rules were applied to correct inconsistencies and to remove slivers or voids polygons from the database.



Figure 5. Intermediate supervision process - Quality control.



Figure 6. Field validation.

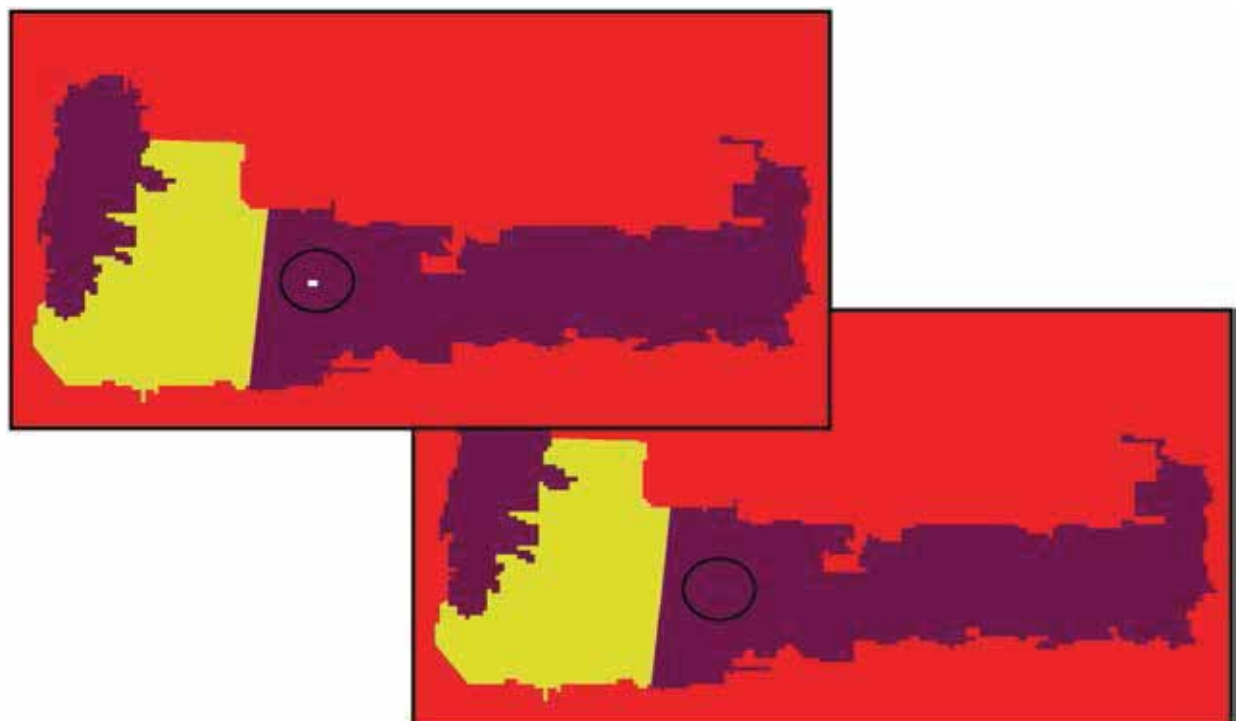


Figure 7. Data harmonization and final database generation.

## LEGEND

The legend for land cover mapping was created by FAO in consultation with SUPARCO and representatives of the Crop Reporting Services of all provinces. The photo-keys of different land cover types were developed which serve to illustrate the feature on the ground (texture, tone, colour and reflectance) of the land cover units, present in the images.

The final version of the legend is composed of 38 land cover classes aggregated into 13 main classes which are as follows:

### 1. Orchard

Orchards are the cultivated or maintained areas for the production of fruits, nuts, berries, or ornamentals. Orchards are divided into two subclasses on the bases of growth form namely tree orchards and shrub orchards. Orchards are generally found in the agricultural irrigated area. An herbaceous crop could be present beneath the trees.

### 2. Crop Irrigated

Areas used for the production of annual crops such as wheat, rice, cotton, corn, soybean, vegetables and tobacco. This class also includes all land being actively tilled. The differentiation of this class with rainfed crops is made on the basis of the presence of channels, geographic location and local knowledge. Herbaceous crop irrigated and herbaceous crop surrounded by tree orchards are included in crops irrigated.

### 3. Crop Marginal and Irrigated Saline

Crop marginal and irrigated saline are identified as those areas which are currently used for agriculture with low and unstable rainfall or higher rainfall areas intensively used, relative to user-capability, under existing population densities, traditional technologies and institutional structures. Crop marginal and irrigated include herbaceous crop irrigated saline fields and herbaceous crop rainfed in desert area. Herbaceous crop rainfed in desert areas are mostly found in the southern part of Sindh province, where the arid climate and the consequent shortage of rainwater allow crops to take place only when the occasional

rainfall occurs and hence fields are sporadically active. Differentiation of this class with the class crop rainfed is made on the basis of geographic location and local knowledge. Herbaceous crop in saline area can resemble as reflectance to the class saline area. Its discrimination with saline area can be done on the basis of clear field pattern.

### 4. Crop in Flood Plain

Herbaceous crop located only in proximity of the river bed is termed as crop in floodplain. The water supply is provided either by irrigation or by the annual floods. Crop in floodplain includes herbaceous crop irrigated in floodplain and herbaceous crop post-flooding.

### 5. Crop Rainfed

The term rainfed agriculture is used to describe farming practices that rely only on rainfall for water. Crop rainfed includes herbaceous crop rainfed and herbaceous crop rainfed in sloping land. The differentiation of this class with irrigated crops is made on the basis of geographic location, absence of drainage network and local knowledge. Herbaceous crop rainfed in sloping land can be found only in the sloping mountainous areas of Hindu Kush and Himalayan region.

### 6. Forest

Forest is described as area characterized by tree cover natural or semi-natural woody vegetation, generally taller than 6 meters. Forest includes both natural and planted forest. In this class trees forest plantation, trees closed, trees open and mangroves are considered as subclasses. Tree forest plantation refers to governmental plantation. This class can be identified with large area and regular shape. Tree closed are type of vegetation with tree percentage cover more than 60%. The class closed trees occurs in the different parts of the country. It has woody natural vegetation, found both in broad as well as in needle leaves. Open trees are type of vegetation with mandatory presence of trees and herbaceous growth forms with percentage cover varying from 10 to 60% in both. Mangroves are forest type exclusively found in the coastal belt.

### 7. Natural vegetation in wet areas

The subclasses include river bank, wetlands, shrubs closed to open in wetland, tree closed in wetland and tree open in wetland. The classes are derived on the basis of soil and vegetation type. River bank is a part of the river bed flooded during the rainy season (Floodplain). The bed of the seasonal rivers is included in this class. Wetlands are herbaceous vegetation with cover ranging from 60% to 100% found in flooded/wet areas, sometimes associated with shrubs. Shrubs closed to open in wetland found along the rivers and associated flooded areas. Generally, in the vegetated portion of the river bank, made of shrubs with cover 20-100%. Tree closed in wetland are woody vegetation occurring along the rivers and associated flooded areas, with cover from 60 to 100%. Tree open in wetlands are the woody vegetation with cover ranging from 10 to 60%.

### 8. Range Lands - Natural Shrubs and Herbs

Rangelands are vast natural landscapes in the form of grasslands, shrublands and woodlands. Areas characterized by natural or semi-natural woody and herbaceous vegetation with aerial stems, generally less than 6 meters tall, with individuals or clumps not touching to interlocking. These areas are not subject to intensive management such as tilling, but can be utilized for grazing. Shrub closed, shrubs open and herbaceous closed to open are the subclasses that are included in rangelands. Shrubs with a cover from 60 to 100% are considered as shrub closed. A layer of trees sparse (1-10%) could be present with shrub closed. Open shrubs are natural or semi-natural vegetation with shrubs ranging from 10 to 60% and trees ranging from 1 to 10%. These are found mainly on the hilly areas of Pakistan and generally have broad as well as needle leaves. Herbaceous closed to open is a type of vegetation where mandatory presence of herbaceous growth forms varies from 10 to 100% and optional presence of trees and shrubs up to 10% of cover.

### 9. Built-up Area

It defines all the built-up areas (urban, industrial, airport etc.) with all vegetated areas linked to the built-up such as gardens, golf courses, urban recreation parks, plots devoted to urban expansion, etc.



## 10. Bare Areas

This class describes areas that have very less natural and manmade vegetative cover. The subclasses include sand dunes, barren land and sand over bare rocks. Barren land is bare soil area with very low density of shrubs and no agriculture activity. Sand dunes are made of low ridges or hillocks of drifted sand mainly moved by wind. The shifting sand is not covered by vegetation and if present, is negligible.

## 11. Bare Areas with Sparse Natural Vegetation

Sand dunes with natural vegetation, bare rocks (with sparse vegetation) and desert flat plain are included in bare areas with sparse natural vegetation. These are the areas where sparse vegetation could be present but the percentage coverage would be less than 10%. Sand dunes with natural vegetation are dunes that have permanent vegetation cover ranges from 1 to 40%. The vegetation cover causes a process of dune stabilization. According to the amount of vegetation cover, dunes are stabilized or semi-stabilized. Bare rocks (with sparse vegetation) are a class that contains less than 10% of growth forms. The class based on the geographical location of the area that is declared as desert other than sand dunes.

## 12. Wet Areas

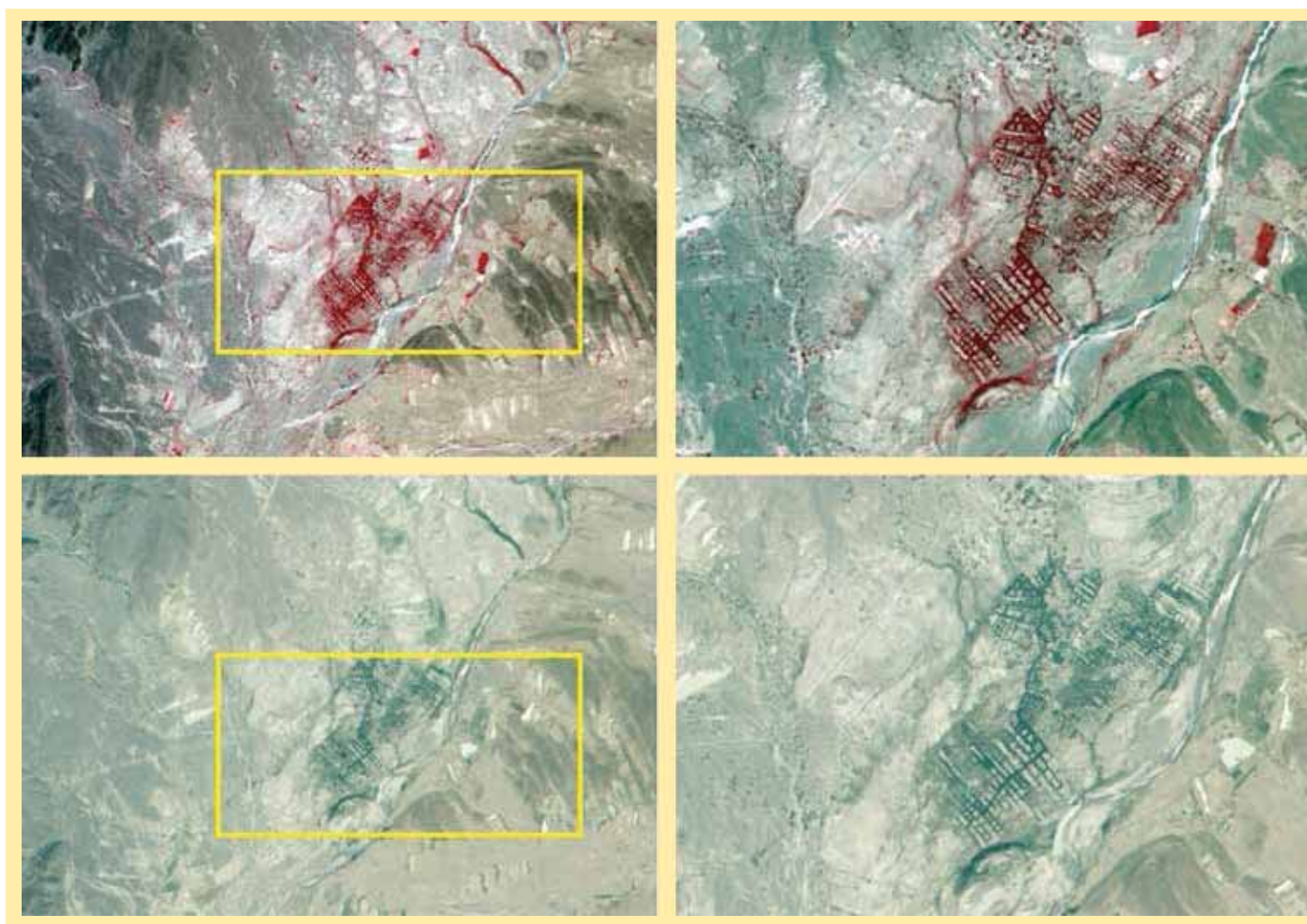
Areas which are naturally covered with fresh or saline water such as river and lakes are grouped in this class. Wet areas are characterized by drainage and the consequent presence of sluggishly moving or standing water saturating the soil with sparse natural vegetation. The subclasses include mud flats, river perennial, salt lake, water bodies, saline area and water logged bare areas. The classes are derived on the basis of presence of water at the surface. Mud flats are areas with wet sand in proximity of mangroves forest and coastal area. River perennial is a part of the river bed where there is a constant presence of flowing water throughout the year. Saline lakes are water bodies located near the coast where the water is brackish or saline. Lake shore is also included in the classes of water bodies and saline lake. Saline area can resemble as reflectance to the class herbaceous crop irrigated saline fields. In this case the field pattern is absent. Water logged

bare area is a low level land generally filled with a high water table. It is generally surrounded by agricultural area.

## 13. Snow and Glaciers

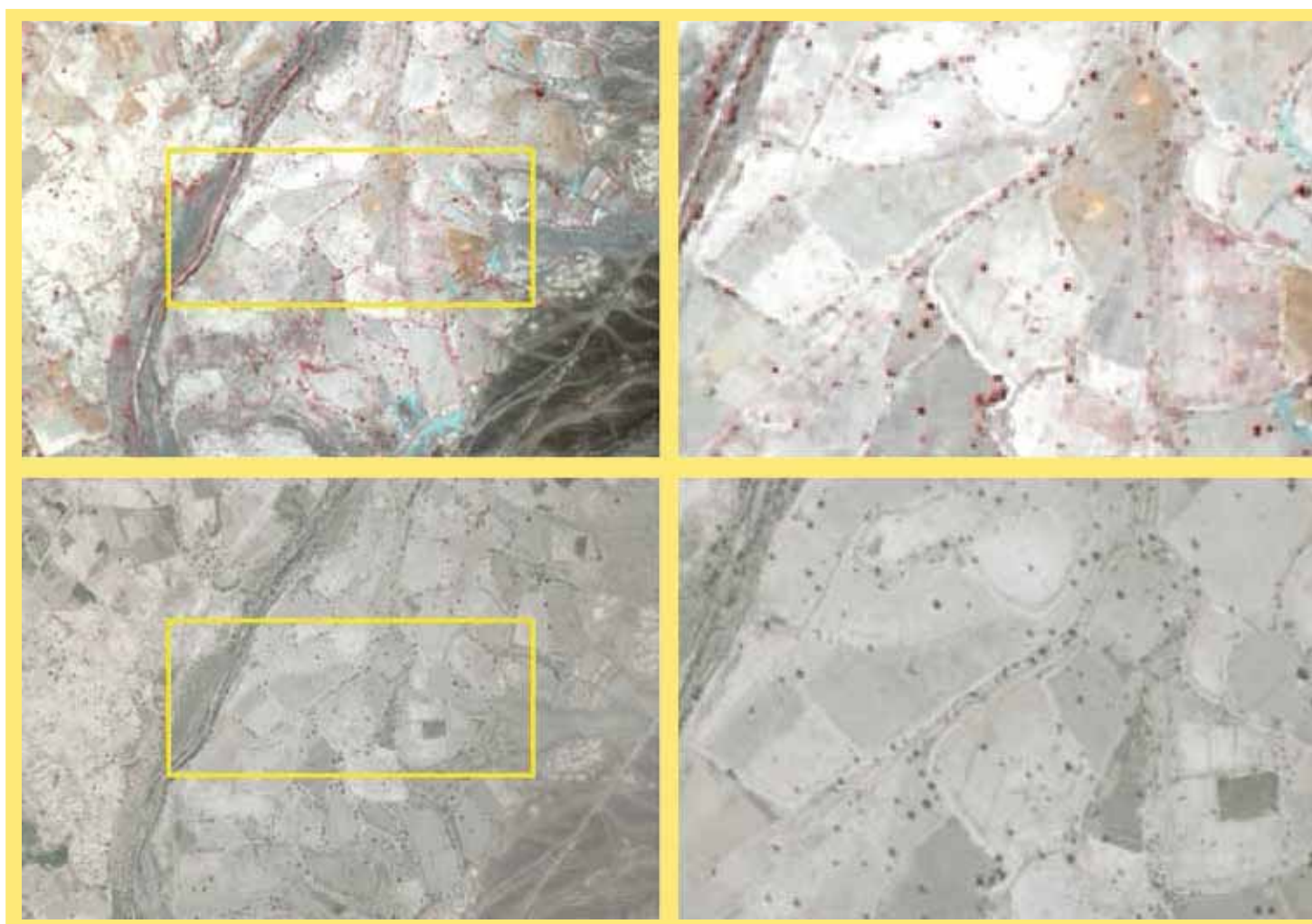
The subclasses include snow permanent, glaciers and glacier with debris. Snow permanent is the area characterized by year-long surface cover of ice and/or snow. Glaciers are permanent solid moving under its own gravity; it forms where the accumulation of snow exceeds its ablation (melting and sublimation) over many years, often centuries. Glaciers with debris contain permanent moving ice with deposits of eroded material from rocks on its surface.

## PHOTO KEYS



1. CROP IRRIGATED

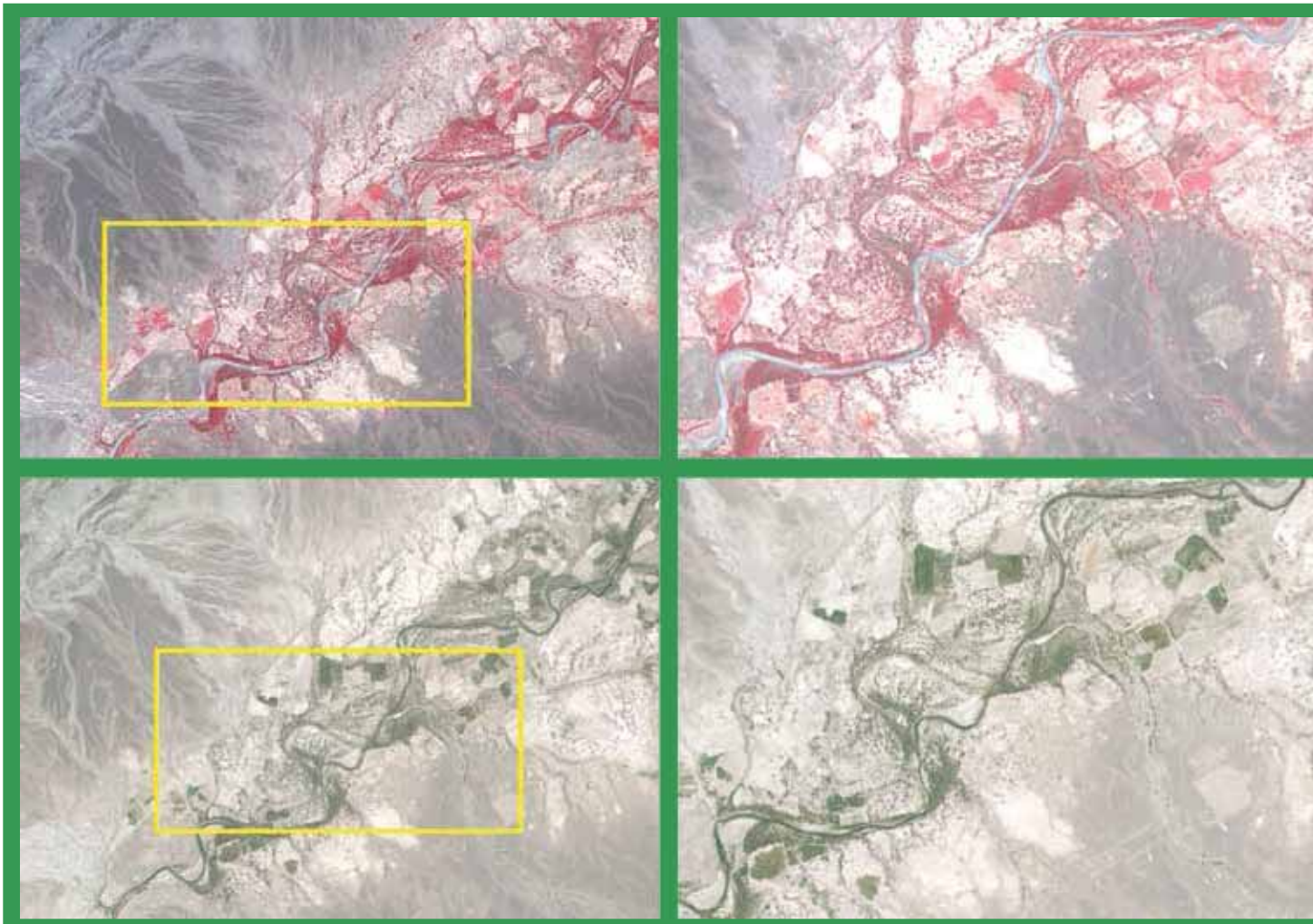
Herbaceous crop  
surrounded by  
tree orchard



2. CROP RAINFED

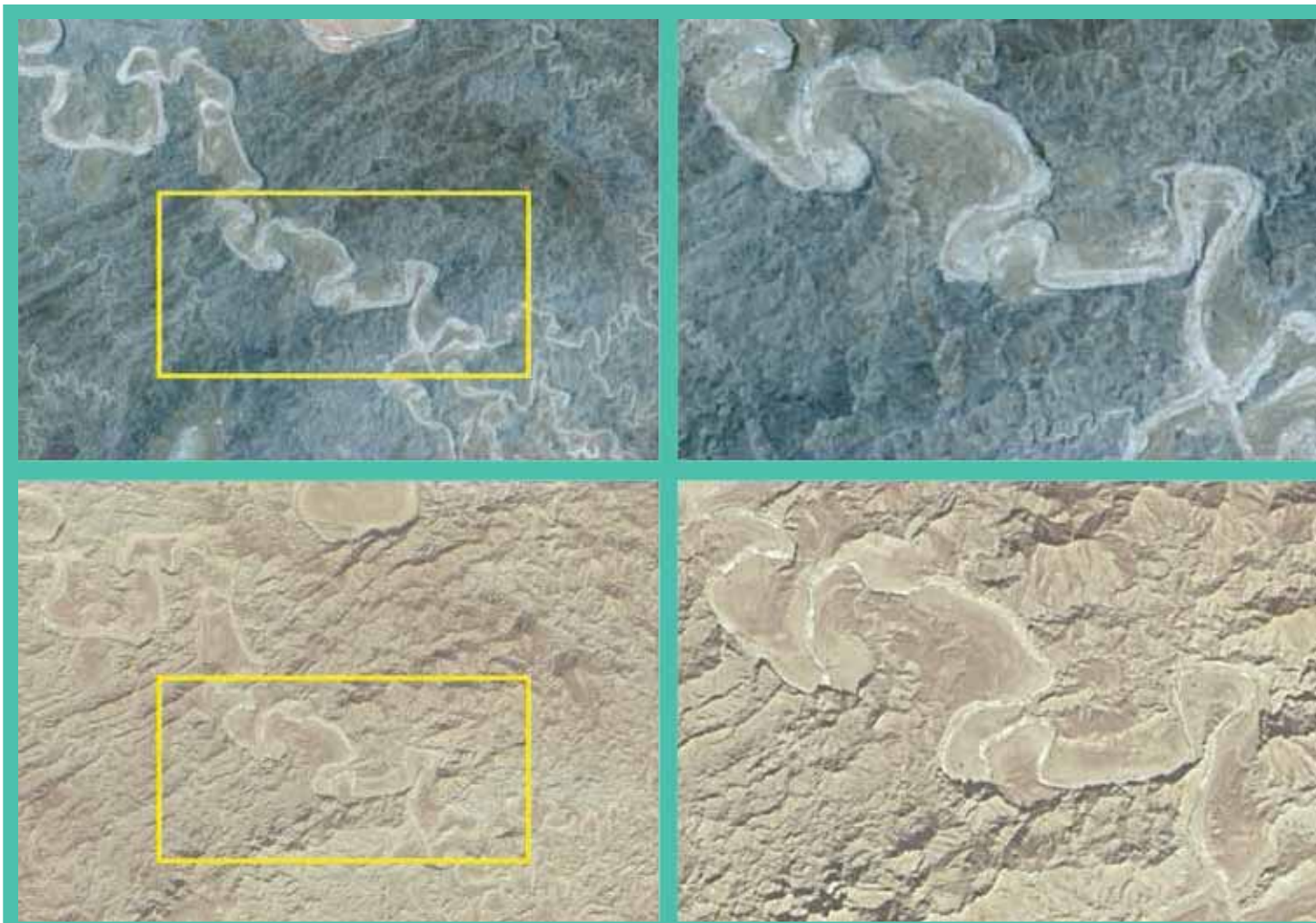
Herbaceous crop  
rainfed





### 3. FOREST

Trees open



### 4. NATURAL VEGETATION IN WET AREAS

River bank



5. RANGELANDS  
NATURAL SHRUBS  
AND HERBS

Shrub closed

Herbaceous  
natural  
closed to open

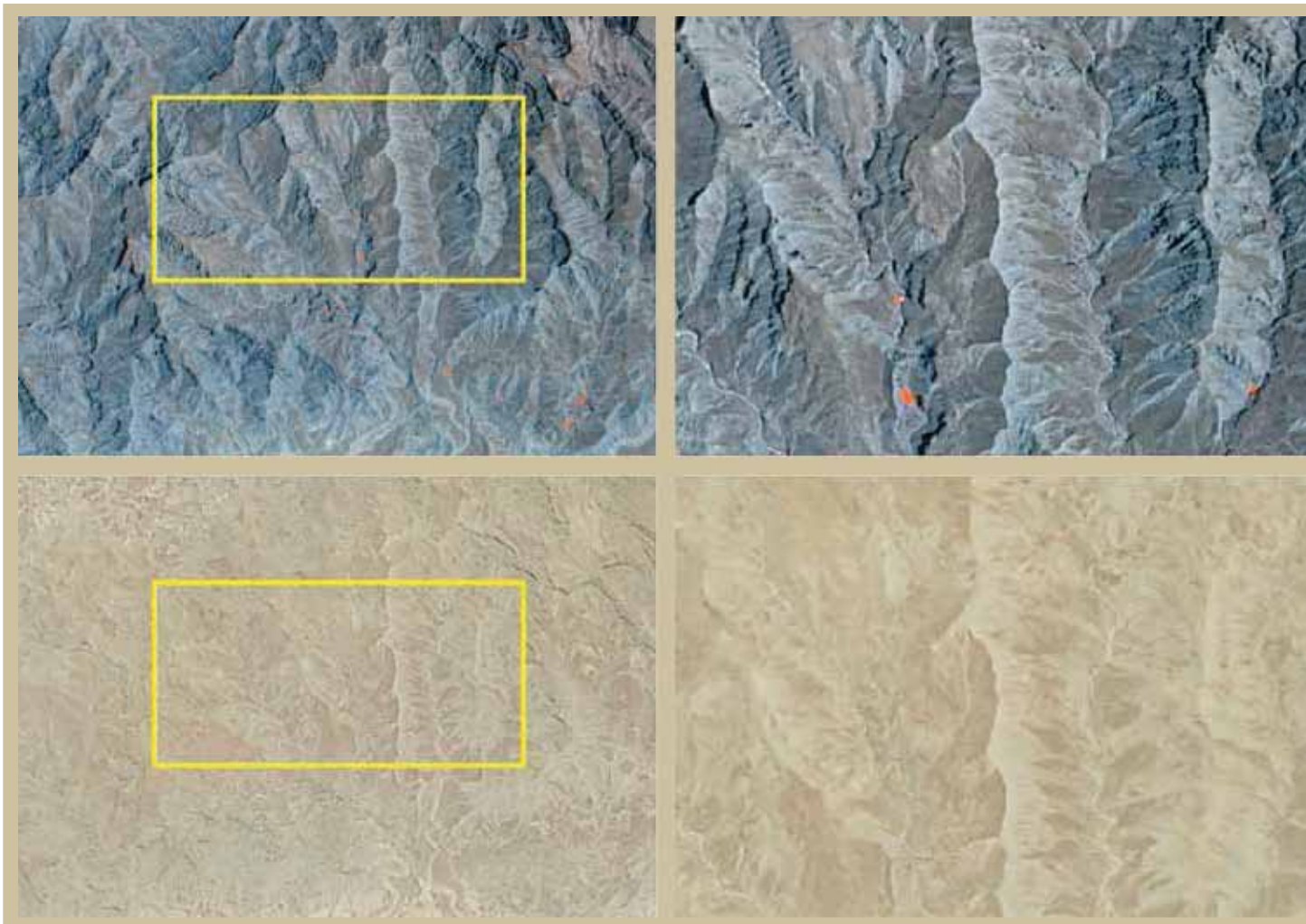


## 6. BUILT-UP AREA



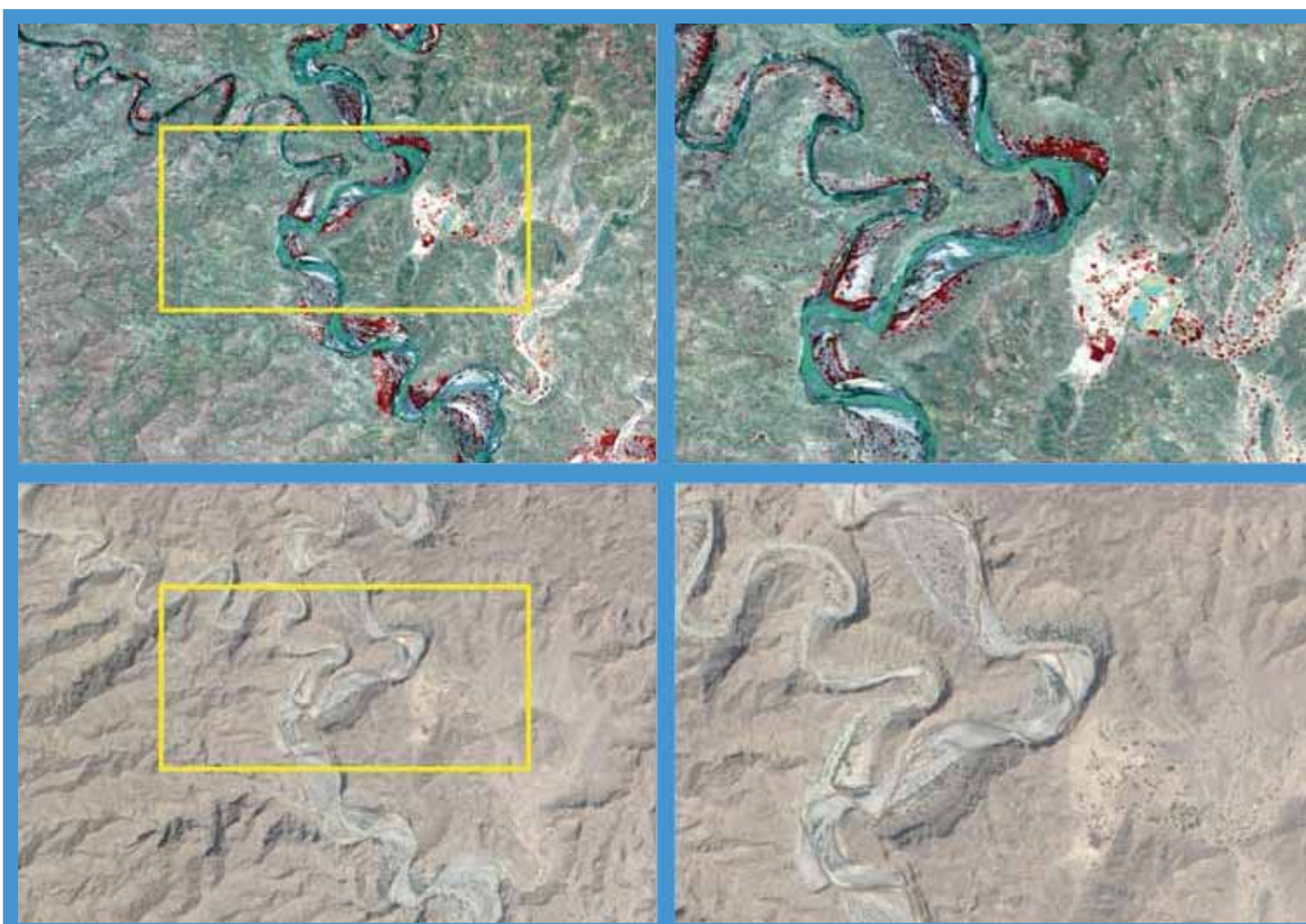
Build-up area





8. BARE AREAS WITH  
SPARSE NATURAL  
VEGETATION

Bare rocks  
(with sparse  
vegetation)

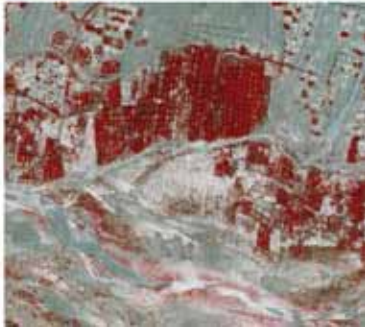
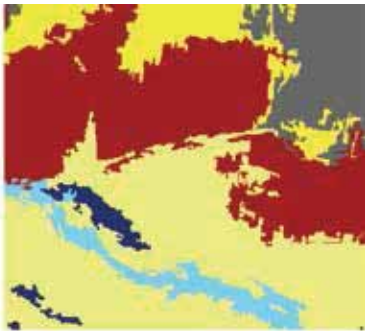
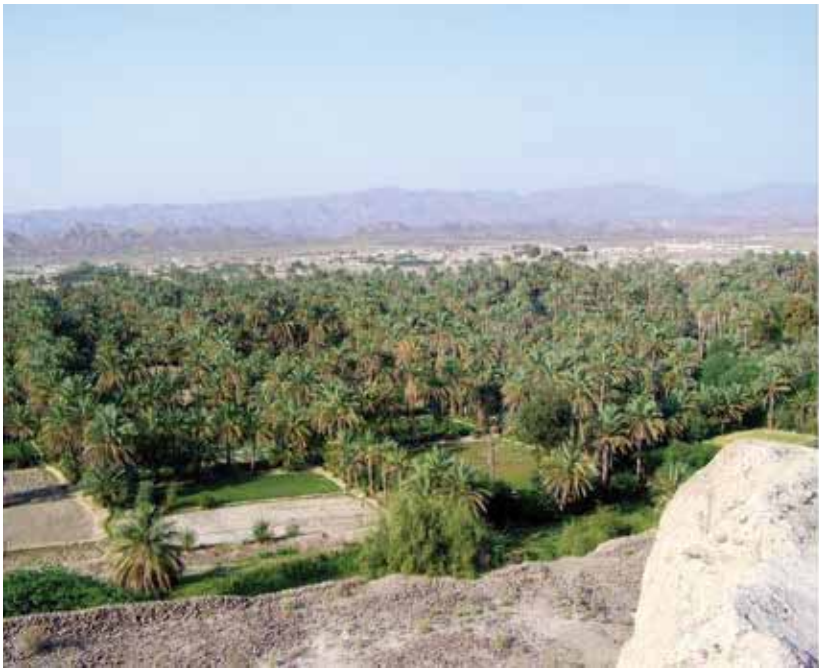


9. WET AREAS

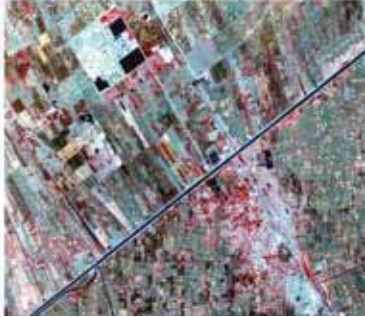
River perennial



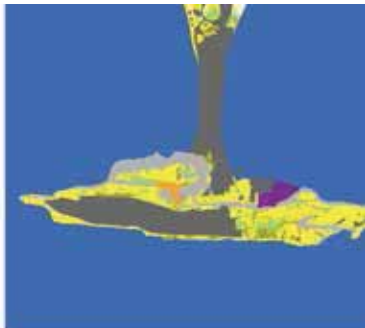
FIELD VALIDATION



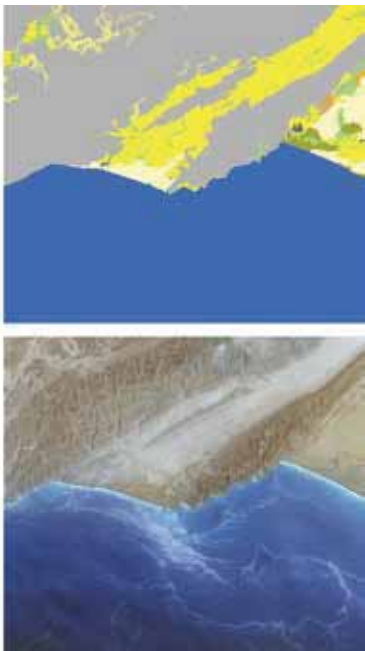
Crop sorrounded by tree orchards



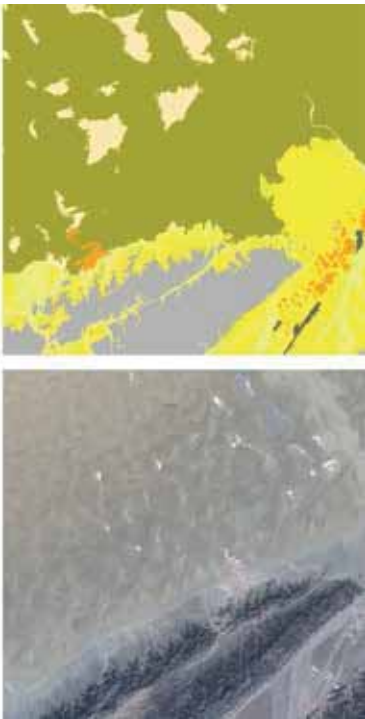
Crop irrigated



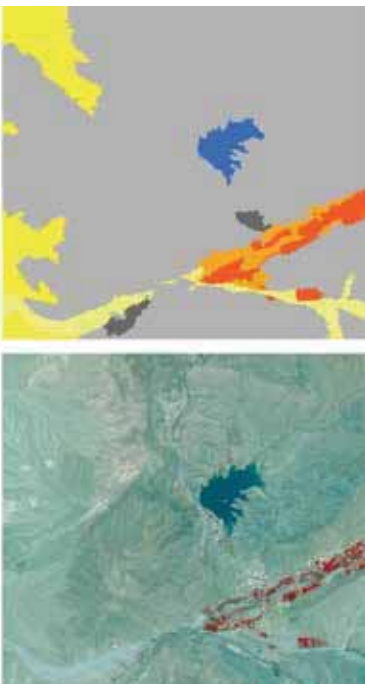
Built-up area



Bare rocks

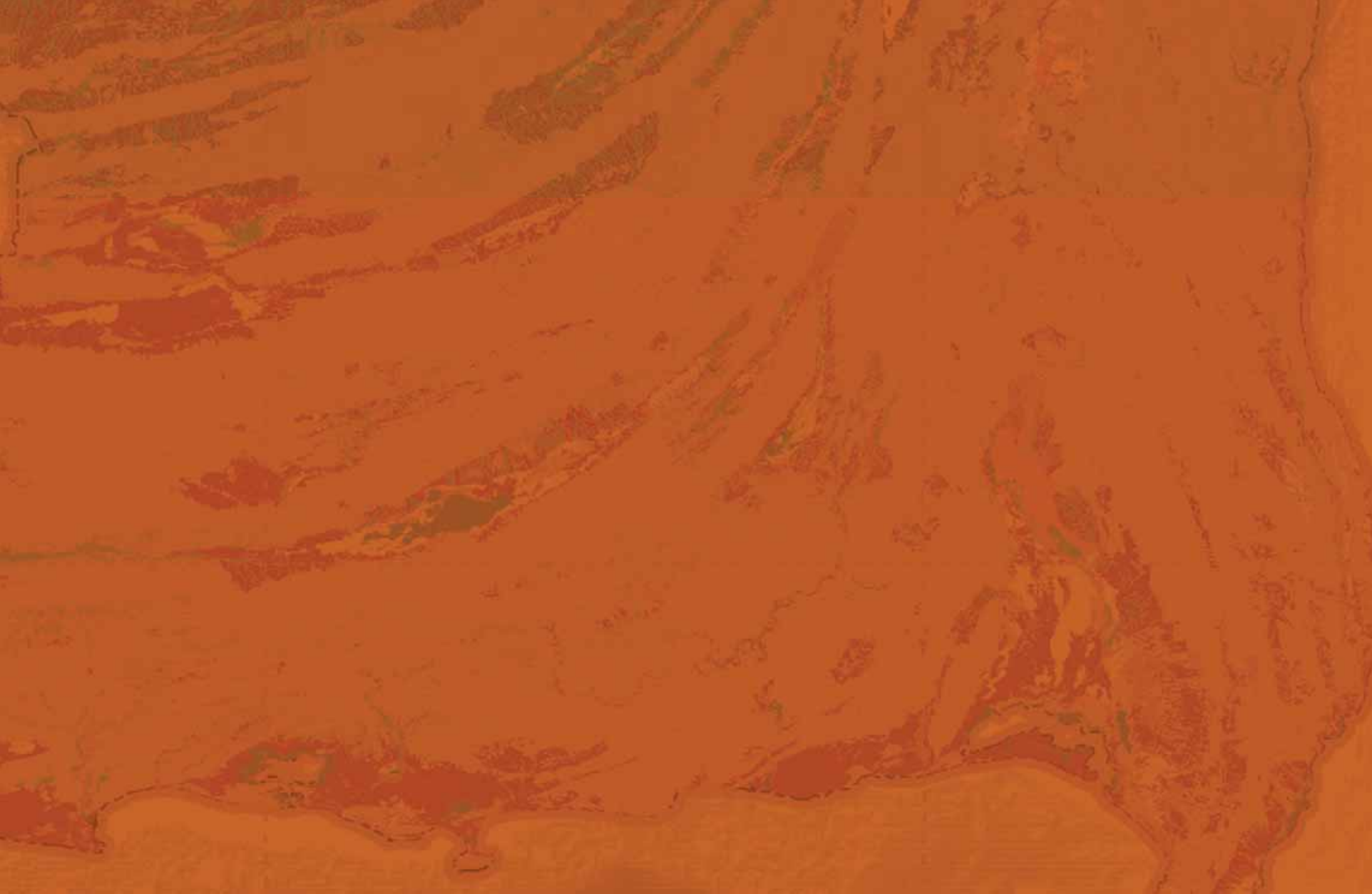


Sand dunes



Water body





**MAPS & STATISTICS**  
*The Balochistan Province*





## THE BALOCHISTAN PROVINCE

Balochistan, the land of Baloch" is the largest province of Pakistan, located in the south western region of the country. With an area of 347,251 Km<sup>2</sup>, it forms 43.6% of the total area of Pakistan. Its provincial capital and largest city is Quetta. To the north east, it shares borders with Punjab and Federally Administered Tribal Areas (FATA), Sindh lies at the south east, Arabian Sea to the south while Iran and Afghanistan to the west and north respectively. It is inhabited mostly by Baloch, Pashtun and Brahui. Other smaller communities include Hazaras, Sindhis, Punjabis and settlers such as Uzbeks and Turkmens. The principal languages in the region are Balochi, Pashto, Brahvi, Urdu and Persian.

The history of Balochistan region dates back to the Palaeolithic era. The earliest settlements in the site of Mehargarh, date to ceramic Neolithic (7000-6000 BC). In ancient times, the region was part of the Achaemenid Persian Empire and then various Persian, Indian empires and local kingdoms. At that time it was presumably inhabited by some mix of Iranian and Indian people. People followed Hinduism, Buddhism, and Zoroastrianism. The region acquired a notorious reputation due to Alexander the Great disastrously marching back to Babylon after his Indian campaign through its deserts, leading to the deaths of thousands of soldiers.

Physically, Balochistan is an extensive plateau of rough terrain divided into basins by mountain

ranges of different heights and ruggedness. Broadly, the geographic area of this province is divided into four distinct zones namely, upper highlands, lower highlands, plains and deserts.

The upper highlands, locally known as Khorasan, rise as high as 3700 m with valley floors about 1500 m above sea level. These highlands include ranges such as Sulaiman, Tabak Kakari, Murdar, Zarghoon, Taktu and Chiltan. The lower highlands have an altitude ranging from 600 to 1200 m and are located in the south eastern part of the province.

The plains comprises of small area and include Kachhi plain, situated to the south of Sibi and narrow plain area along Makran coast stretching from Kachhi to Iranian border. The terrain is dominated by mountains and valley floors and piedmont plains make up 15 % of the landscape. The western part of the province consists of vast plains covered with black gravel surface and sand dunes. The coastal line of Balochistan is about 760 km long, with a number of peninsulas and promontories. Prominent ports are Sonmiani, Pasni and Gwadar. The important rivers include Zhob, Nari, Bolan, Pishin, Lora, Mula, Hub, Porali, Hingol, Rakshan and Dash.

The climate of the upper highlands is characterised by very cold winters and hot summers. In the lower highlands, winters vary from extremely cold in northern districts to milder conditions closer to the Makran coast. Winters are mild on the plains

and summers are hot and dry, especially in the arid zones. The plains are also very hot in summer, with temperatures reaching 50 °C. The desert climate is characterised by hot and very arid conditions.

Balochistan is rich in natural resources and is the second major supplier of natural gas. Its economy is largely based upon the production of natural gas, coal and other minerals. Other sectors include fisheries, mining, manufacturing industries, trade and other services being rendered by public and private sector organisations.

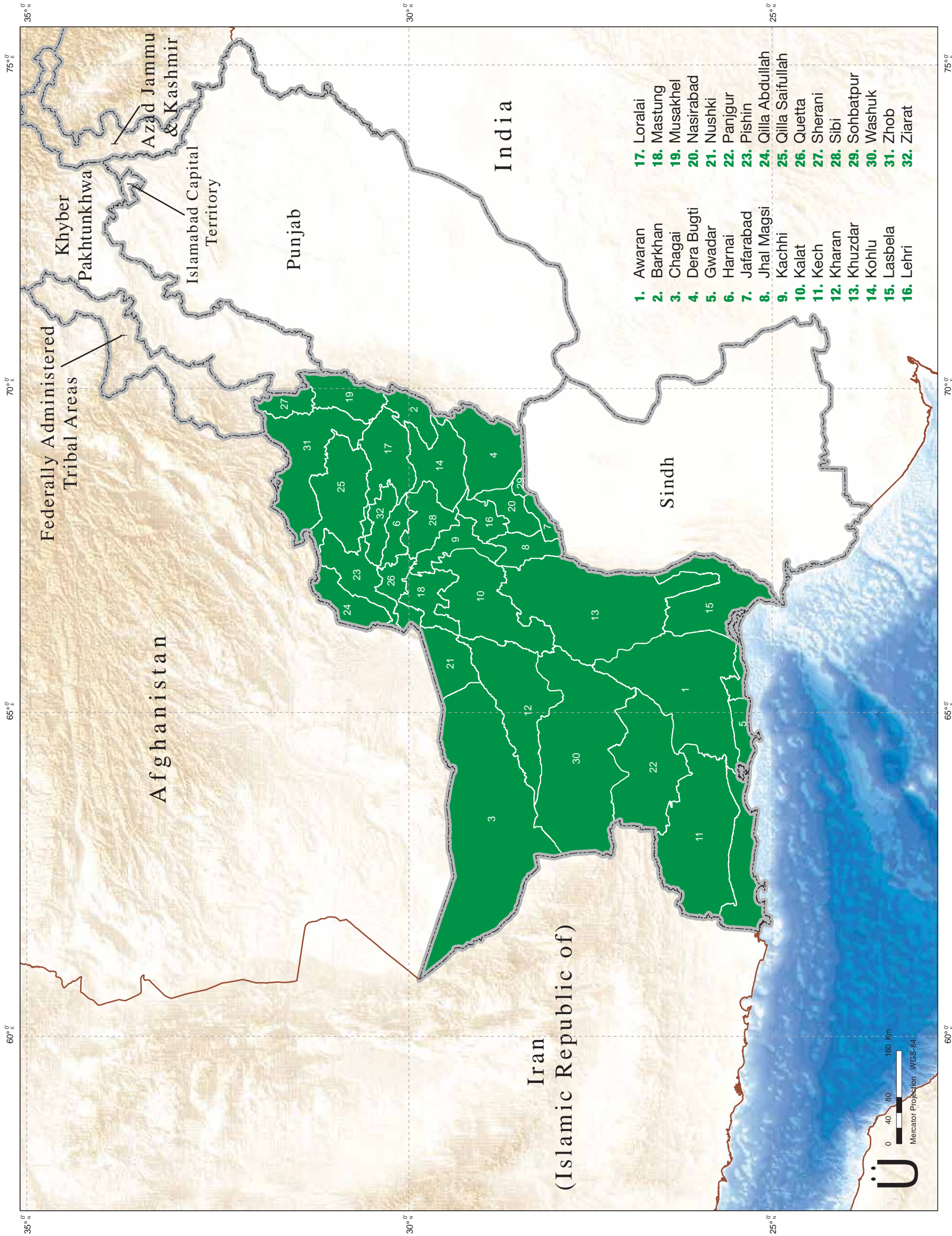
Hazarganji Chiltan National Park is in the Sulaiman Mountains, with desert and forest habitats, about twenty kilometres southwest of Quetta city. The National animal of Pakistan named Markhor (wild goat) is also found in this park. A very old juniper forest spread over a vast area in Ziarat district.

The Balochistan land is very fertile and many fruits and trees are grown here like apple, plums, grapes, pistachio, almonds, walnut, wild olives, chilgozha, pines, peaches, apricots, cherry, dates and melon. Administratively, the province is divided into thirty two districts namely, Awaran, Barkhan, Chagai, Dera Bugti, Gwadar, Harnai, Jafarabad, Jhal Magsi, Kachhi, Kalat, Kech, Kharan, Khuzdar, Kohlu, Lasbela, Lehri, Loralai, Mastung, Musakhel, Nasirabad, Nushki, Panjgur, Pishin, Qilla Abdullah, Qilla Saifullah, Quetta, Sherani, Sibi, Sohbatpur, Washuk, Zhob and Ziarat.



Source: [www.encyclop.com](http://www.encyclop.com)

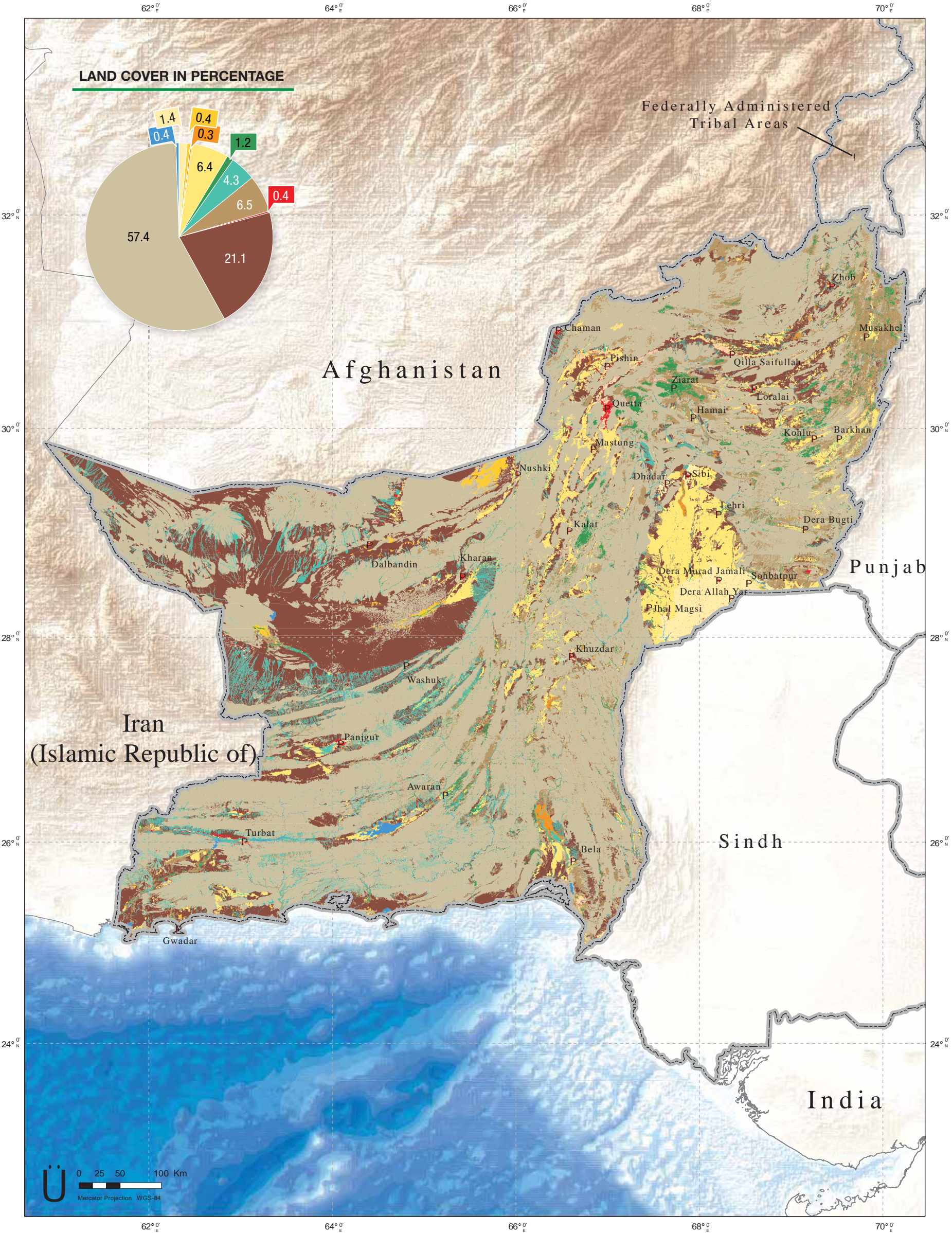




## DISTRIBUTION OF LAND COVER IN THE PROVINCE OF BALOCHISTAN IN KM<sup>2</sup>

DISTRICT	Orc	Clr	Cls	Cfp	C Ra	NtM	NvW	Rsh	Bui	Bar	Bav	Wet	Snw
Awaran	2.293	12.287	0.00	17.902	544.680	475.175	1,525.448	1,350.768	38.995	2,271.011	18,923.481	294.932	0.00
Barkhan	9.595	1.710	0.00	0.047	949.297	111.125	36.935	730.928	7.337	166.133	1,553.184	2.421	0.00
Chagai	14.816	0.00	106.863	0.034	226.558	46.890	2,613.913	251.480	83.235	17,317.792	23,975.770	1.952	0.00
Dera Bugti	1.832	80.882	3.729	0.166	740.655	35.848	226.264	1,841.721	25.952	929.075	6,366.776	11.753	0.00
Gwadar	0.00	0.00	60.578	0.262	432.784	39.722	502.236	403.848	43.115	4,758.201	5,772.232	269.050	0.00
Harnai	2.918	0.01	0.00	3.030	83.210	170.085	59.711	697.185	4.253	121.099	1,504.893	7.834	0.00
Jafarabad	0.686	1,463.481	46.068	0.00	0.00	1.077	0.426	4.986	30.513	10.570	0.514	29.267	0.00
Jhal Magsi	0.00	254.933	7.048	0.00	2,212.750	67.689	51.700	203.059	17.846	595.700	424.458	20.095	0.00
Kachhi	0.00	107.176	0.00	134.202	1,434.566	23.470	265.083	185.345	14.646	762.091	1,529.111	6.473	0.00
Kalat	35.536	0.00	0.00	0.383	1,532.255	417.188	286.773	692.981	37.511	1,814.538	9,579.894	3.017	0.00
Kech	0.161	87.950	0.00	3.891	546.564	62.868	2,024.600	1,001.528	139.934	3,123.407	16,227.817	202.619	0.00
Kharan	0.420	0.00	185.890	44.675	619.934	17.068	682.343	95.260	31.477	4,932.814	8,285.066	0.721	0.00
Khuzdar	2.172	40.862	0.00	143.921	1,597.248	160.879	575.718	2,183.726	67.967	2,244.231	22,955.871	61.548	0.00
Kohlu	0.937	0.636	0.00	0.133	502.438	228.624	131.111	899.373	6.910	433.709	5,679.958	11.186	0.00
Lasbela	68.439	96.210	0.00	364.657	845.430	63.594	534.634	1,257.599	37.247	3,750.529	7,480.323	232.799	0.00
Lehri	0.00	0.00	0.00	0.00	2,407.398	9.469	17.680	130.152	20.388	470.738	60.531	3.040	0.00
Loralai	32.708	0.00	0.00	12.203	802.940	357.158	116.279	999.386	53.046	2,138.061	3,602.034	20.766	0.00
Mastung	58.296	0.00	0.00	0.115	1,061.350	23.767	73.761	84.512	40.444	567.296	2,877.214	0.118	0.00
Musakhel	0.216	0.732	0.00	0.915	274.835	335.255	108.726	3,110.027	3.445	406.473	1,543.503	7.177	0.00
Nasirabad	0.083	1,915.123	7.722	0.00	1,211.241	3.644	15.666	80.332	45.999	206.847	63.165	3.766	0.00
Nushki	0.019	0.00	758.437	1.050	298.232	0.437	87.424	35.574	33.981	1,195.499	3,420.223	0.046	0.00
Panjgur	0.187	40.042	0.00	1.032	585.501	24.707	909.594	479.434	55.266	3,232.217	11,863.993	36.122	0.00
Pishin	133.731	31.556	0.00	56.688	506.342	101.090	61.115	382.726	76.605	626.757	4,127.249	7.097	0.00
Qilla Abdullah	81.937	0.116	0.00	33.331	376.159	0.00	147.246	334.392	65.924	602.567	3,314.457	5.972	0.00
Qilla Saifullah	98.970	0.00	0.00	53.757	604.392	69.684	255.369	777.898	34.676	2,332.545	6,457.241	5.571	0.00
Quetta	39.548	62.110	0.00	1.907	322.915	197.315	53.388	267.746	165.700	353.711	2,105.526	1.613	0.00
Sherani	0.106	0.00	0.052	1.328	70.357	97.288	79.890	544.529	5.396	247.800	1,679.211	6.399	0.00
Sibi	0.00	154.901	0.00	63.305	590.216	114.194	175.431	510.746	18.421	631.041	3,050.429	12.923	0.00
Sohbatpur	0.050	671.202	79.030	0.00	0.069	0.057	0.335	5.848	17.352	4.790	8.506	26.633	0.00
Washuk	43.670	0.276	240.334	5.089	341.400	59.338	3,091.179	536.227	21.897	15,344.778	13,676.260	54.879	0.00
Zhob	9.391	1.719	3.197	12.827	277.725	89.972	241.868	1,549.983	29.731	1,643.661	10,033.496	20.896	0.00
Ziarat	53.292	0.00	0.00	0.488	149.790	523.861	25.843	813.035	11.019	206.804	1,335.603	5.773	0.00
Total in km²	692.01	5,023.90	1,498.95	957.34	22,149.23	3,928.54	14,977.69	22,442.33	1,286.23	73,442.49	199,477.99	1,374.46	0.00
Total in %	0.2	1.5	0.4	0.3	6.4	1.1	4.3	6.5	0.4	21.1	57.4	0.4	0.00
Grand total	347,251.15												







AWARAN

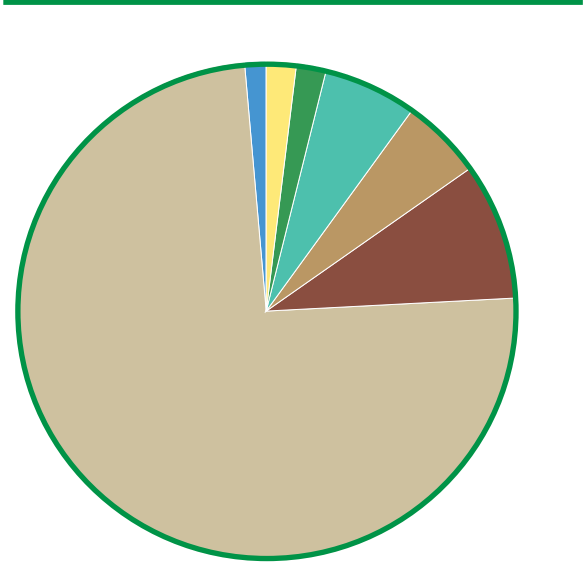
Awaran was notified as a separate district in 1992 and consists of three tehsils namely, Mashkai, Awaran, and Jhal Jao. The district headquarter is located at Awaran. The major tribes of this district include Bizenjo, Muhammad Hasni, Sajdi, Mirwani, Rakhsani, Musiani, Sulaimani and Mengal. Balochi, Brahvi, Pushto and Urdu are the languages spoken in this district. The climate is hot in summer and cold in winter with severe dust storms from June to September. The district produces wheat, barley, canola, rice, maize, pulses and vegetables. Some major fruits include dates and grapes. It also has major deposits of chromites and magnesite. The famous Hingol National Park lies in this district.

INDEX MAP



Source: Gulraiz Ghouri

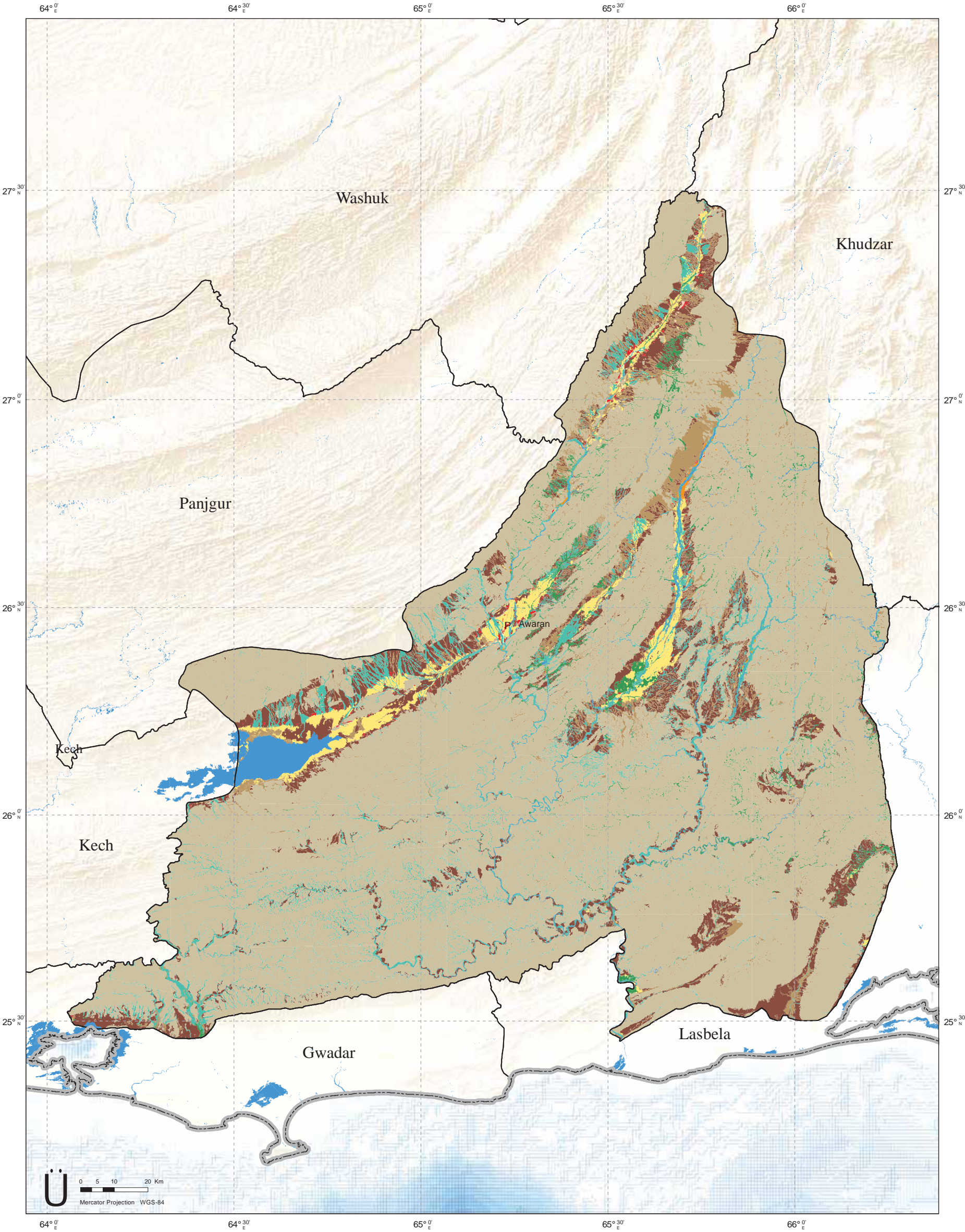
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km <sup>2</sup>	%
	Orchards	2.29	0.0
	Crop Irrigated	12.29	0.0
	Crop Marginal and Irrigated Saline	00.0	0.0
	Crop in Flood Plain	17.90	0.1
	Crop Rainfed	544.68	2.1
	Forest - Natural Trees and Mangroves	475.17	1.9
	Natural Vegetation in Wet Areas	1,525.45	6.0
	Range Lands - Natural Shrubs and Herbs	1,350.77	5.3
	Built-up	39.00	0.2
	Bare Areas	2,271.01	8.9
	Bare Areas with Sparse Natural Vegetation	18,923.48	74.3
	Wet Areas	294.93	1.2
	Snow and Glaciers	00.0	0.0
Grand Total		25,456.97	







BARKHAN

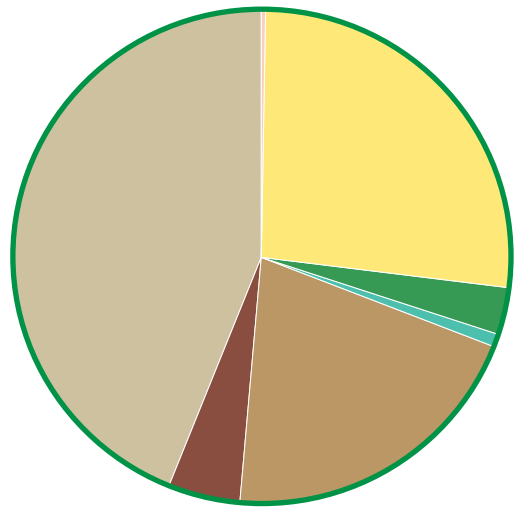
Barkhan derived its name from ‘Baro Khan’, the founder of the Barozai family of Pannis. It was notified as a separate district in 1991. It has one tehsil with district headquarter at Barkhan. It is mainly home to Khetran, Marri and Buzdar tribes. Khetrani and Balochi are the main languages spoken here. The climate is moderate with mild summer and cold winter. Dust storms are common in this area. Some major crops and fruits include wheat, barley, fodder, sorghum, millet, maize, mung, mash, beans, melons, cotton, vegetables, apricot, peach, grapes, almond, pomegranate, apple and plum. The district has deposits of coal and gypsum. Some historical places include archaeological sites of dinosaur fossils and Mawand Fort.

INDEX MAP



Source: camel4all.files.wordpress.com

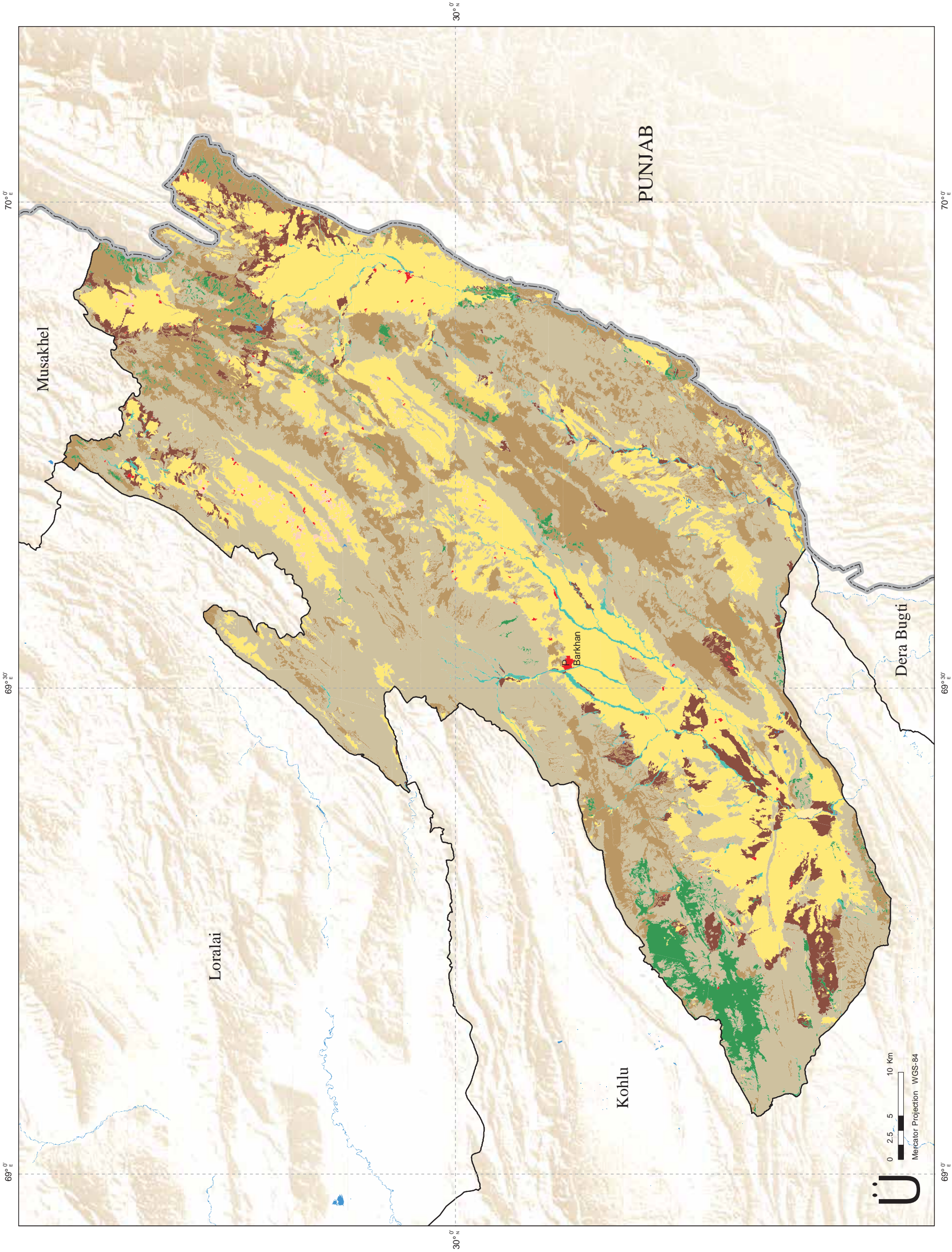
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	9.59	0.3
Crop Irrigated	1.71	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.05	0.0
Crop Rainfed	949.30	26.6
Forest - Natural Trees and Mangroves	111.12	3.1
Natural Vegetation in Wet Areas	36.94	1.0
Range Lands - Natural Shrubs and Herbs	730.93	20.5
Built-up	7.34	0.2
Bare Areas	166.13	4.7
Bare Areas with Sparse Natural Vegetation	1,553.18	43.5
Wet Areas	2.42	0.1
Snow and Glaciers	0.00	0.0
Grand Total	3,568.71	



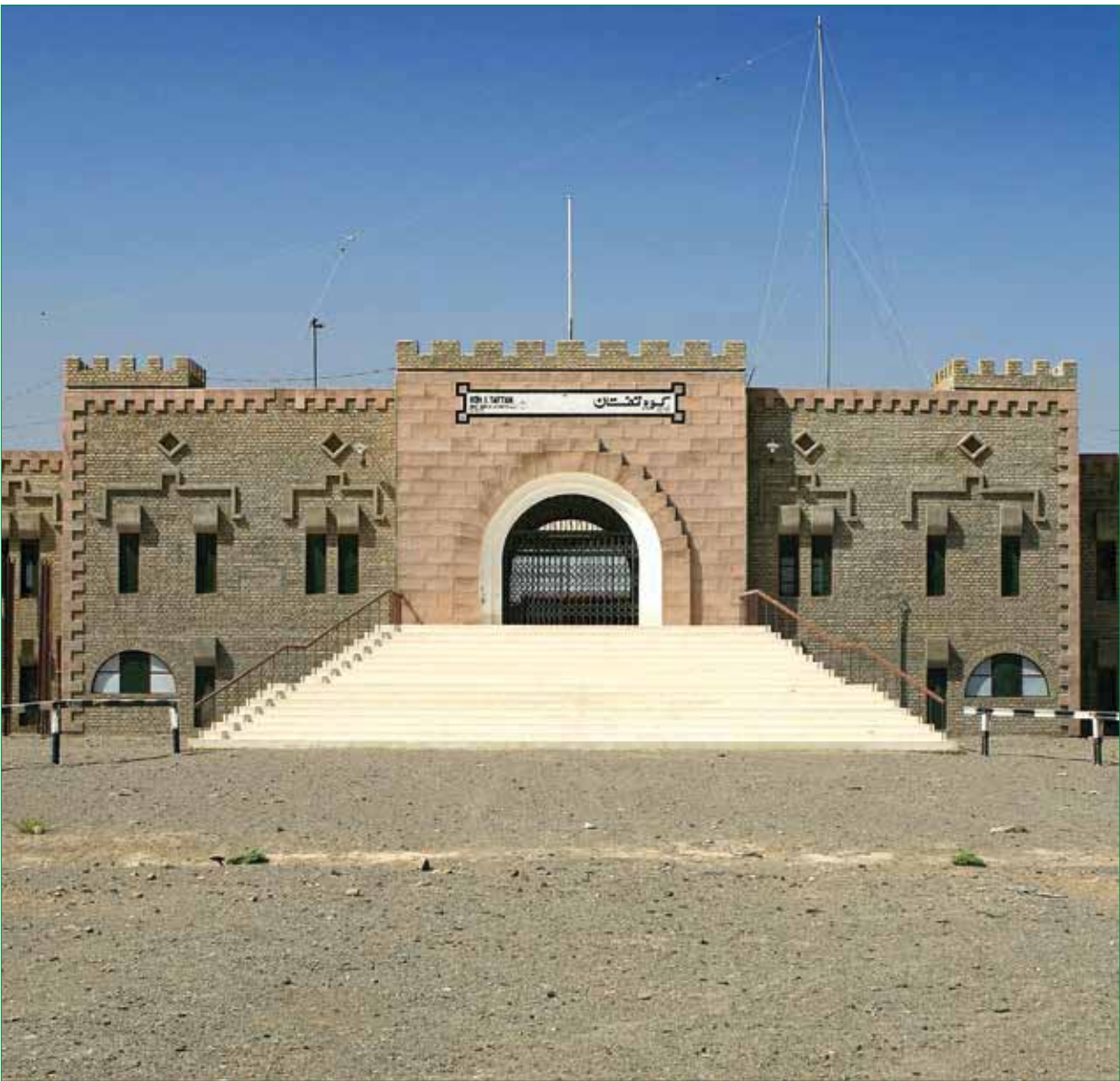




CHAGAI

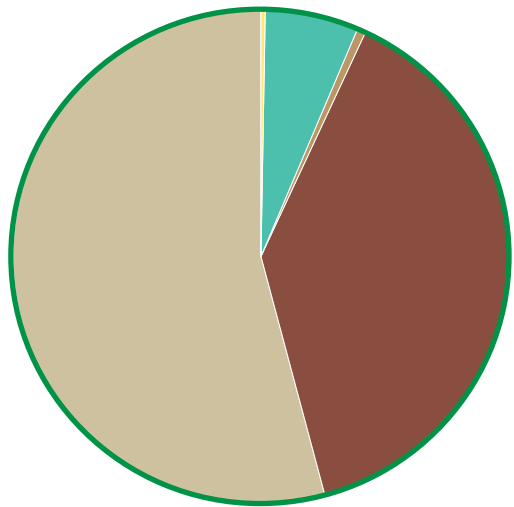
Chagai is the largest district of Pakistan. It was notified as a separate district in 1970. It consists of five tehsils namely, Chagai, Dalbandin, Nok Kundi, Taftan and Yakmach. The district headquarter is located at Dalbandin. The climate is hot in summer and cold in winter. The district mainly produces wheat, barley, mustard, cumin, lentil, millet, maize, mung, mash, beans, cotton and vegetables. Major fruits include almond, apricot, grapes, peach, plum, pear, pomegranate and dates. It's popular handicrafts include embroidered dresses, caps and leather, carpets, striped rugs, woollen shawls, blankets, mats and baskets.

INDEX MAP



Source: Nadeem Khawar

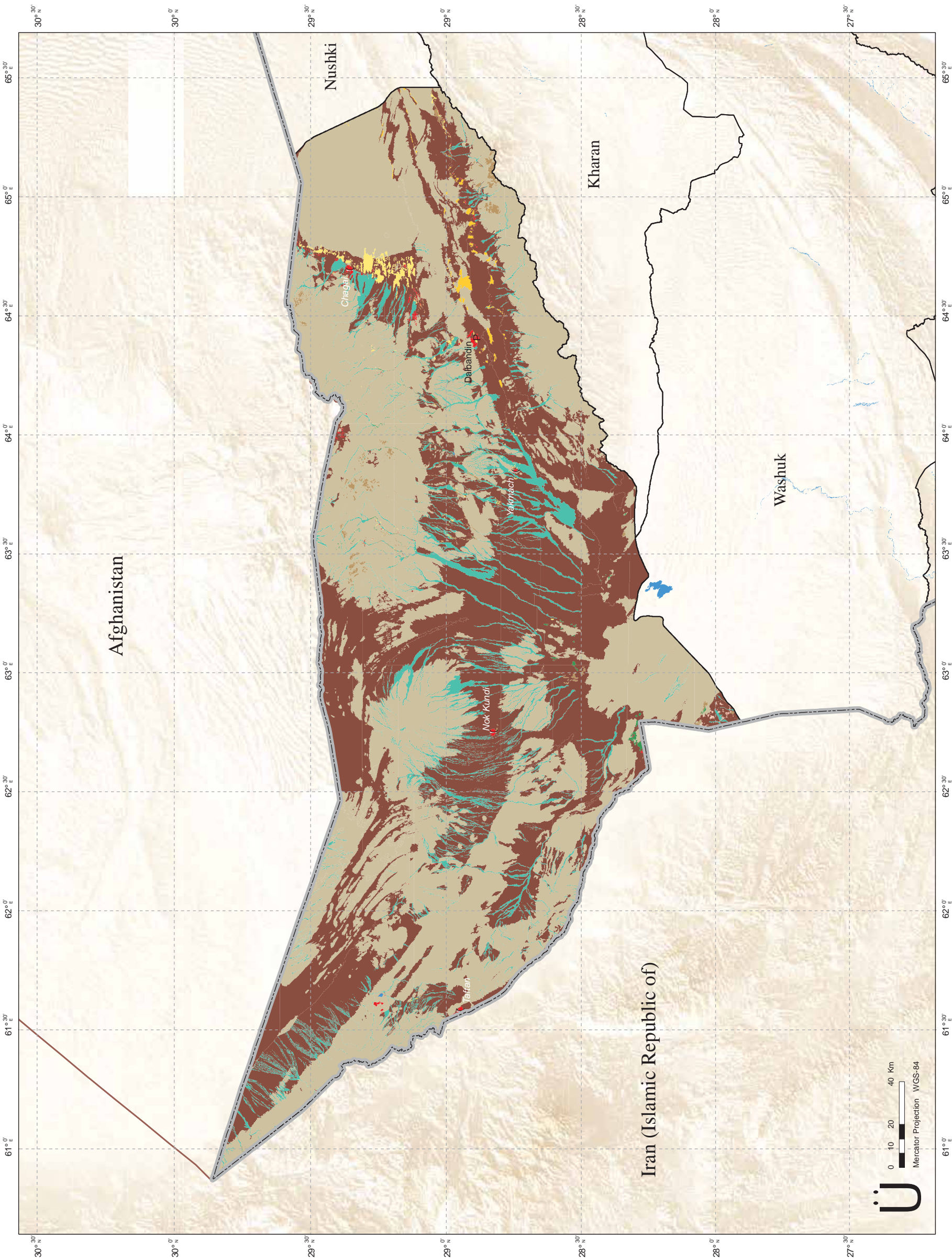
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	14.82	0.0
Crop Irrigated	00.0	0.0
Crop Marginal and Irrigated Saline	106.86	0.2
Crop in Flood Plain	0.03	0.0
Crop Rainfed	226.56	0.5
Forest - Natural Trees and Mangroves	46.89	0.1
Natural Vegetation in Wet Areas	2,613.91	5.9
Range Lands - Natural Shrubs and Herbs	251.48	0.6
Built-up	83.24	0.2
Bare Areas	17,317.79	38.8
Bare Areas with Sparse Natural Vegetation	23,975.77	53.7
Wet Areas	1.95	0.0
Snow and Glaciers	0.00	0.0
Grand Total	44,639.30	







DERA BUGTI

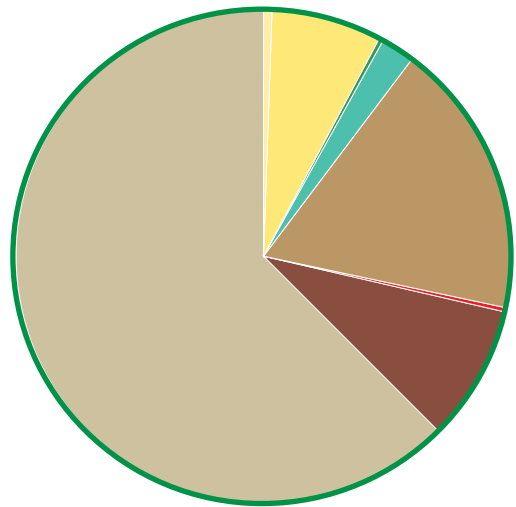
Dera Bugti was notified as a separate district in 1993. It consists of three tehsils namely, Dera Bugti, Phelawagah, and Sui. The district headquarter is located at Dera Bugti. It is home to the people of Rahija, Mandawani, Kalpar, Nauthani, Masuri, Ferozani, Salaman Zai, Mundarani, Qasimani, Shambani, Sobazai, Pahi, Maretha and Moharkanzai ethnicities. Balochi is the main language spoken here. The climate is generally dry while hot in summer and cold in winter. The district mainly produces wheat, barley, mustard, gram, peas, pulses, cotton and vegetables. Major fruits include mangoes and citrus. It's famous historical sites include Nawab Bugti Fort and Chitarwata formation in Bugti Hills. It has major deposits of natural gas and sulphur.

INDEX MAP



Source: Nadeem Khawar

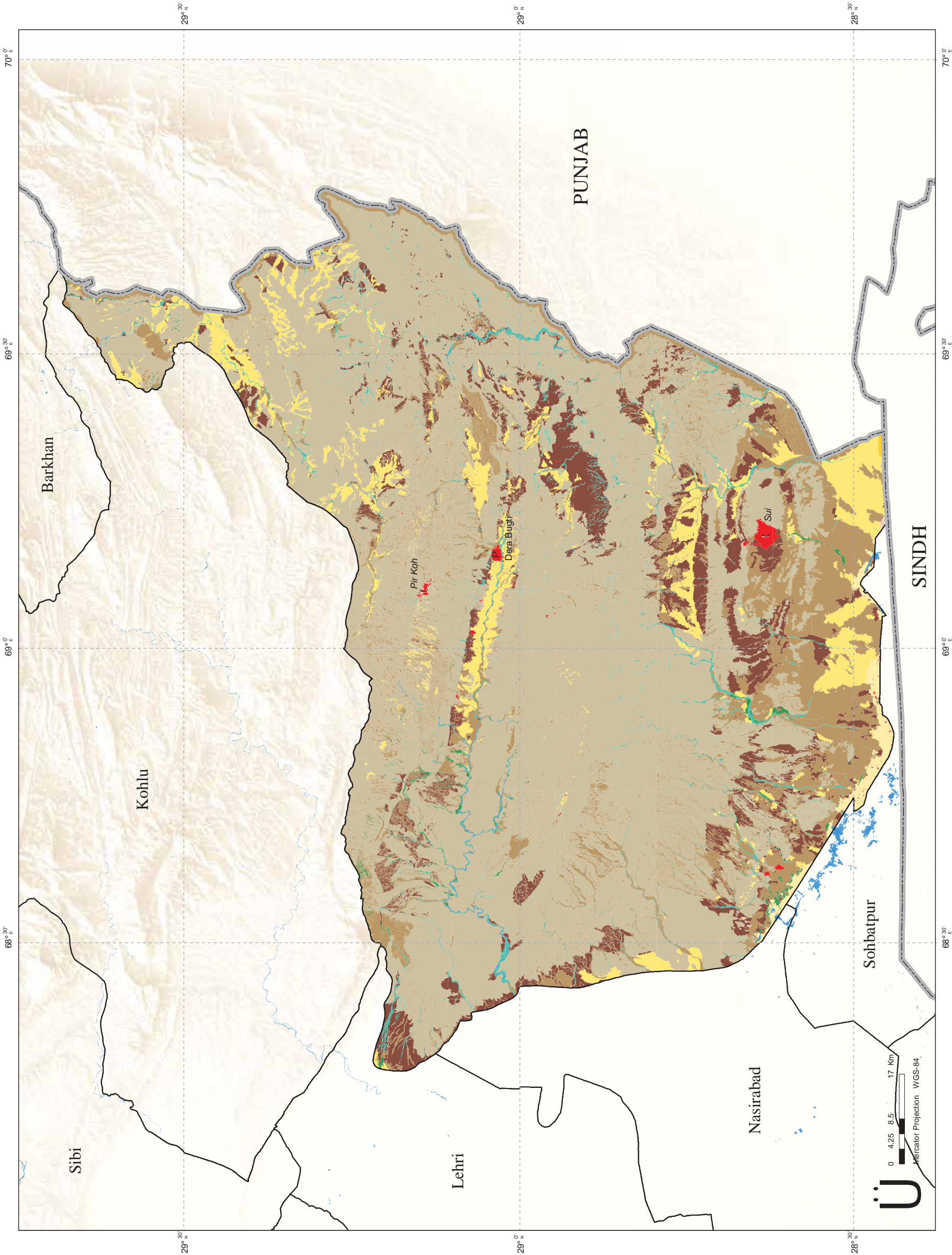
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	1.83	0.0
Crop Irrigated	80.88	0.8
Crop Marginal and Irrigated Saline	3.73	0.0
Crop in Flood Plain	0.17	0.0
Crop Rainfed	740.66	7.2
Forest - Natural Trees and Mangroves	35.85	0.3
Natural Vegetation in Wet Areas	226.26	2.2
Range Lands - Natural Shrubs and Herbs	1,841.72	17.9
Built-up	25.95	0.3
Bare Areas	929.07	9.1
Bare Areas with Sparse Natural Vegetation	6,366.78	62.0
Wet Areas	11.75	0.1
Snow and Glaciers	0.00	0.0
Grand Total	10,264.65	







GWADAR

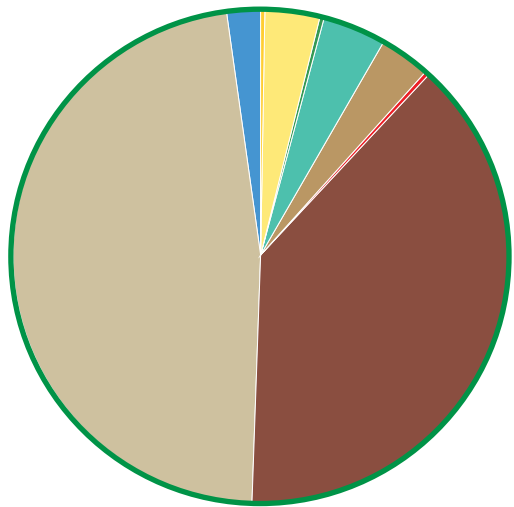
The word Gwadar is derived from Balochi words ‘Gwat’ and ‘dar’, which means the door of air. Gwadar was purchased from Oman in 1958 by Pakistan. It was given the status of district in 1977. It consists of four tehsils namely, Gwadar, Jiwani, Ormara and Pasni. The district headquarter is located at Gwadar city. It is home to Baloch tribes and Balochi is the main language spoken here. The climate is hot and humid. The district mainly produces lentil, vegetables and fodder. Major fruits include dates, papaya, coconut and chickoo. It has major deposits of limestone, bajri sand, rock salt, ordinary stone and sulphur.

INDEX MAP



Source: SM Rafiq

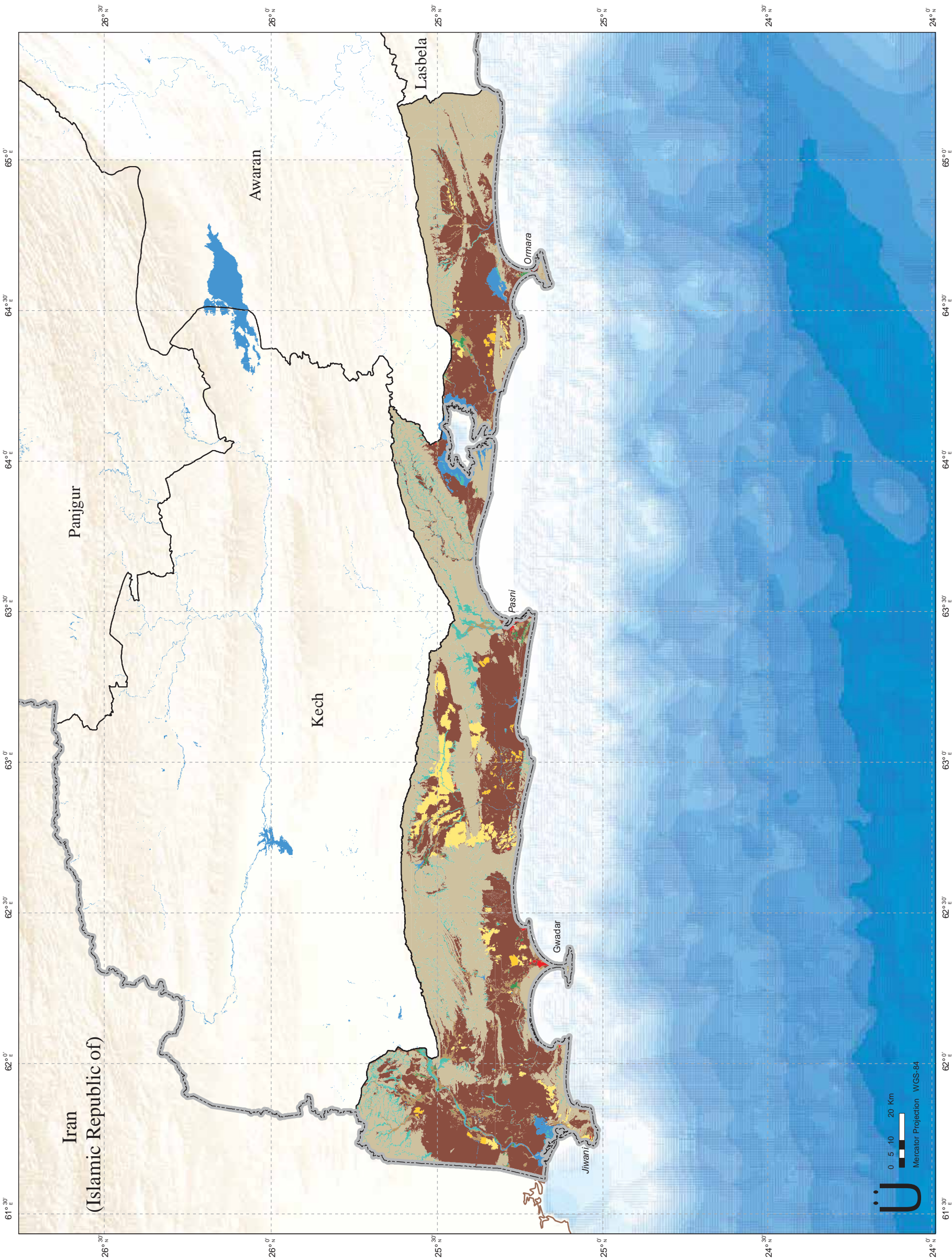
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.00	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	60.58	0.5
Crop in Flood Plain	0.26	0.0
Crop Rainfed	432.78	3.5
Forest - Natural Trees and Mangroves	39.72	0.3
Natural Vegetation in Wet Areas	502.24	4.1
Range Lands - Natural Shrubs and Herbs	403.85	3.3
Built-up	43.11	0.4
Bare Areas	4,758.20	38.7
Bare Areas with Sparse Natural Vegetation	5,772.23	47.0
Wet Areas	269.05	2.2
Snow and Glaciers	0.00	0.0
Grand Total	12,282.03	







HARNAI

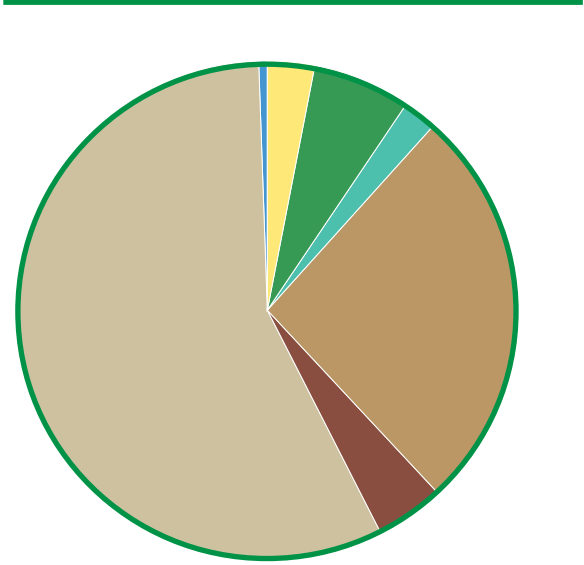
Harnai was notified as a separate district in 2007 prior to which it was a tehsil of Sibi district. It consists of two tehsils Harnai and Shahrag. The district headquarter is located at Harnai. It is home to people of Spin Tareen, Abdullani, Khadrani, Aspani, Miani, Shaikhan, Warasai, Marazai, Bazani and Marpani ethnicities. The spoken language is Tareeno, a dialect of Pashto. Summer is extreme in this area while winter is cold and there is rainfall in monsoon. The district mainly produces wheat, barley, mustard, gram, lentil, rice, sorghum, maize, mash, mung, cotton and vegetables. Major fruits include apricot, citrus, grapes, plum, pomegranate, dates and pear. It has major deposits of coal.

INDEX MAP



Source: dronestagr.am

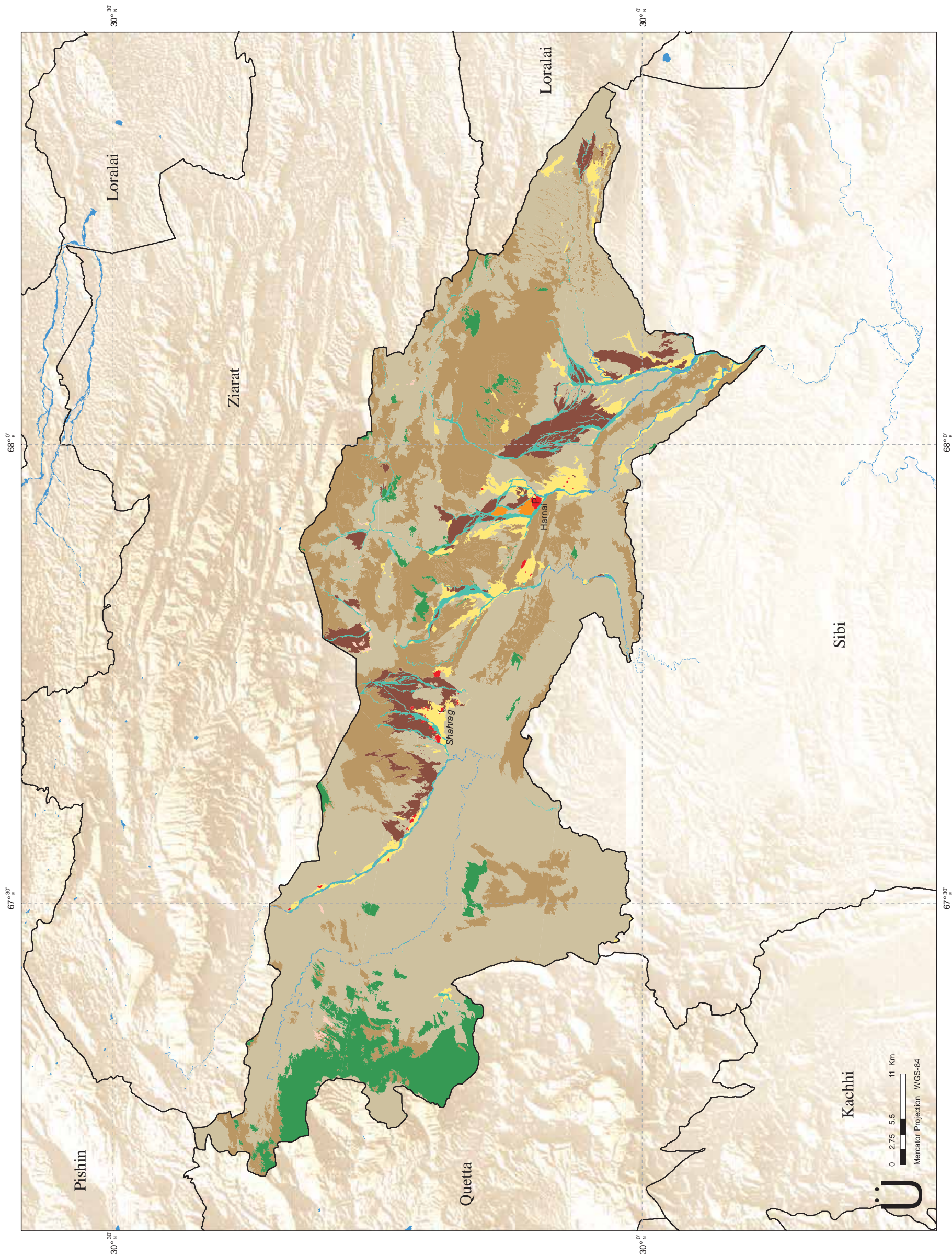
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	2.92	0.1
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	3.03	0.1
Crop Rainfed	83.21	3.1
Forest - Natural Trees and Mangroves	170.09	6.4
Natural Vegetation in Wet Areas	59.71	2.2
Range Lands - Natural Shrubs and Herbs	697.19	26.3
Built-up	4.25	0.2
Bare Areas	121.10	4.6
Bare Areas with Sparse Natural Vegetation	1,504.89	56.7
Wet Areas	7.83	0.3
Snow and Glaciers	0.00	0.0
Grand Total	2,654.22	







JAFARABAD

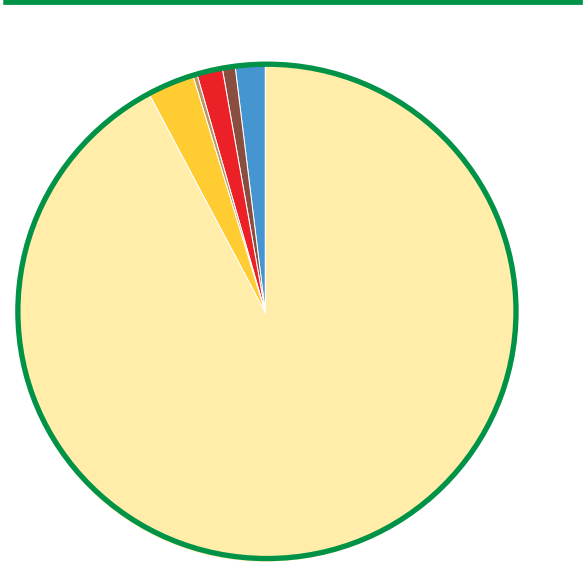
Jafarabad was notified as a separate district in 1987. It consists of three tehsils namely, Gandakha, Jhat Pat and Usta Muhammad. The district headquarter is located at Dera Allah Yar city. The major tribes are Baloch, Brahui and Jamoot. The climate is hot and humid with dust storms in summer. The district produces wheat, barley, mustard, beans, lentil, rice, chickpea, canola, millet, maize, mung, mash and vegetables. Major fruits include dates, mangoes, citrus and guava. It is famous for festival held at the Faqir shrine. Embroidery work, needle work, mat and sheet designing are popular handicrafts of this district.

INDEX MAP



Source: CRS Balochistan

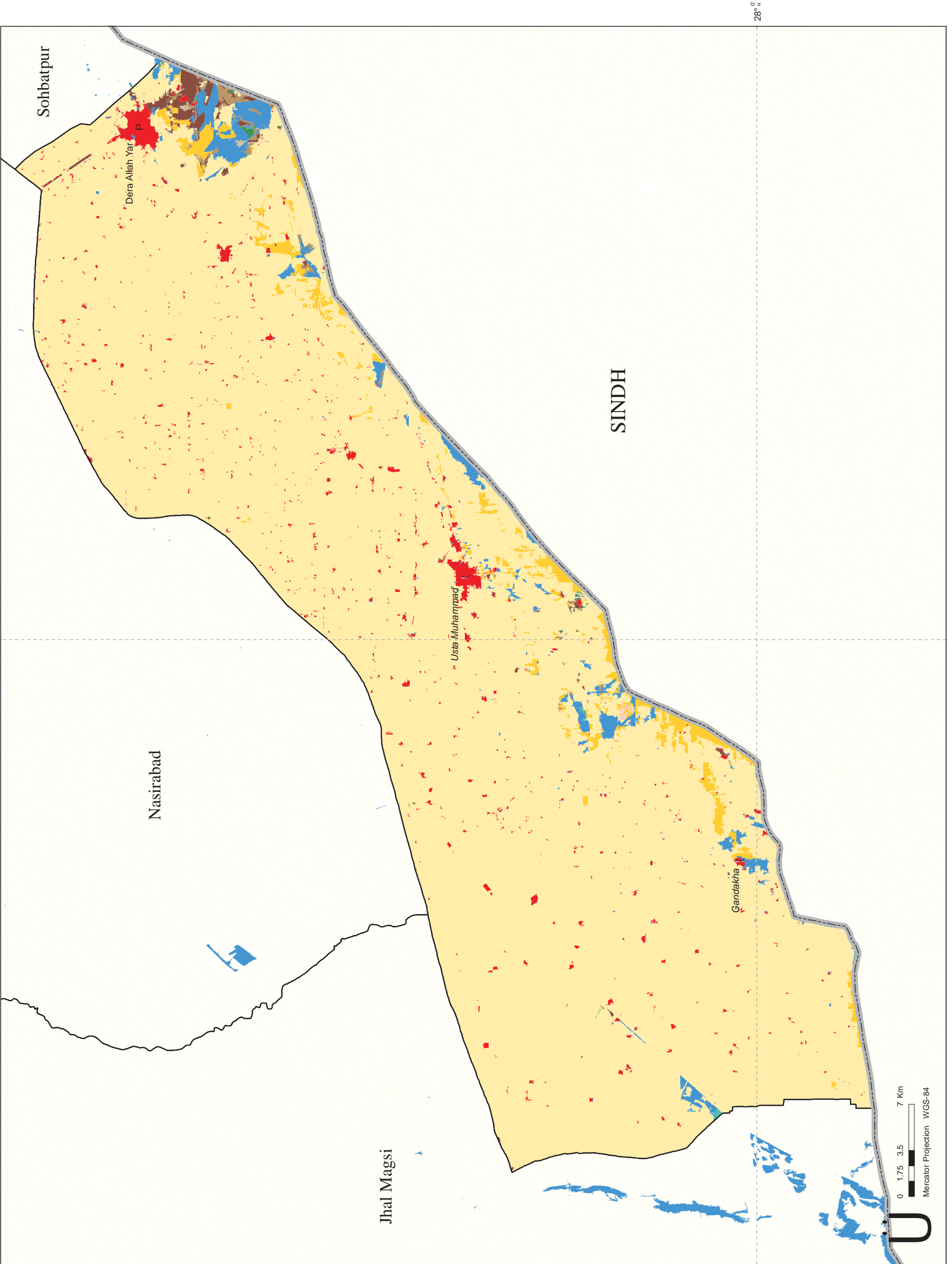
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.69	0.0
Crop Irrigated	1,463.48	92.2
Crop Marginal and Irrigated Saline	46.07	2.9
Crop in Flood Plain	0.00	0.0
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	1.08	0.1
Natural Vegetation in Wet Areas	0.43	0.0
Range Lands - Natural Shrubs and Herbs	4.99	0.3
Built-up	30.51	1.9
Bare Areas	10.57	0.7
Bare Areas with Sparse Natural Vegetation	0.51	0.0
Wet Areas	29.27	1.8
Snow and Glaciers	0.00	0.0
Grand Total	1,587.59	







# JHAL MAGSI

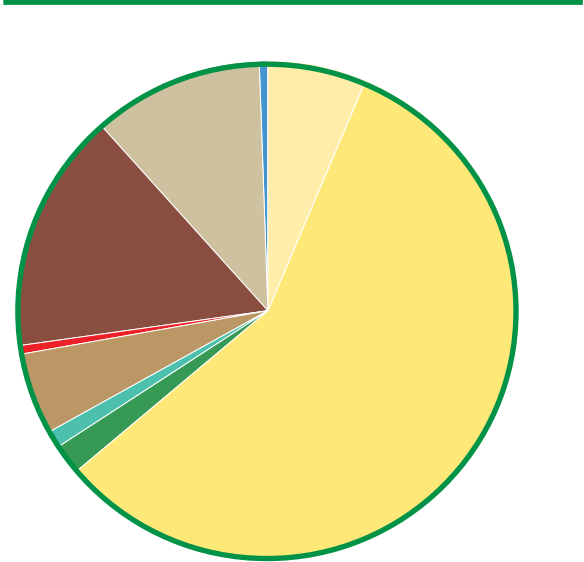
Jhal Magsi was notified as a separate district in 1992. It consists of two tehsils namely, Jhal Magsi and Gandawah. The district headquarter is located at Jhal Magsi. It is home to Baloch and Jamoots. Balochi, Sindhi and Saraiki are the main languages spoken here. The climate is dry and hot. The district mainly produces wheat, barley, mustard, canola, sunflower, fodder, sorghum, sesame, mung, mash, guar seed, tobacco, cotton and vegetables. Major fruits include dates, mango, citrus and guava. Major historical sites include Pingar Mari and Tombs of Moti Ghoram, Altaz Khan, Mian Sahib and Bhootani.

## INDEX MAP



Source: Ameer Hamza

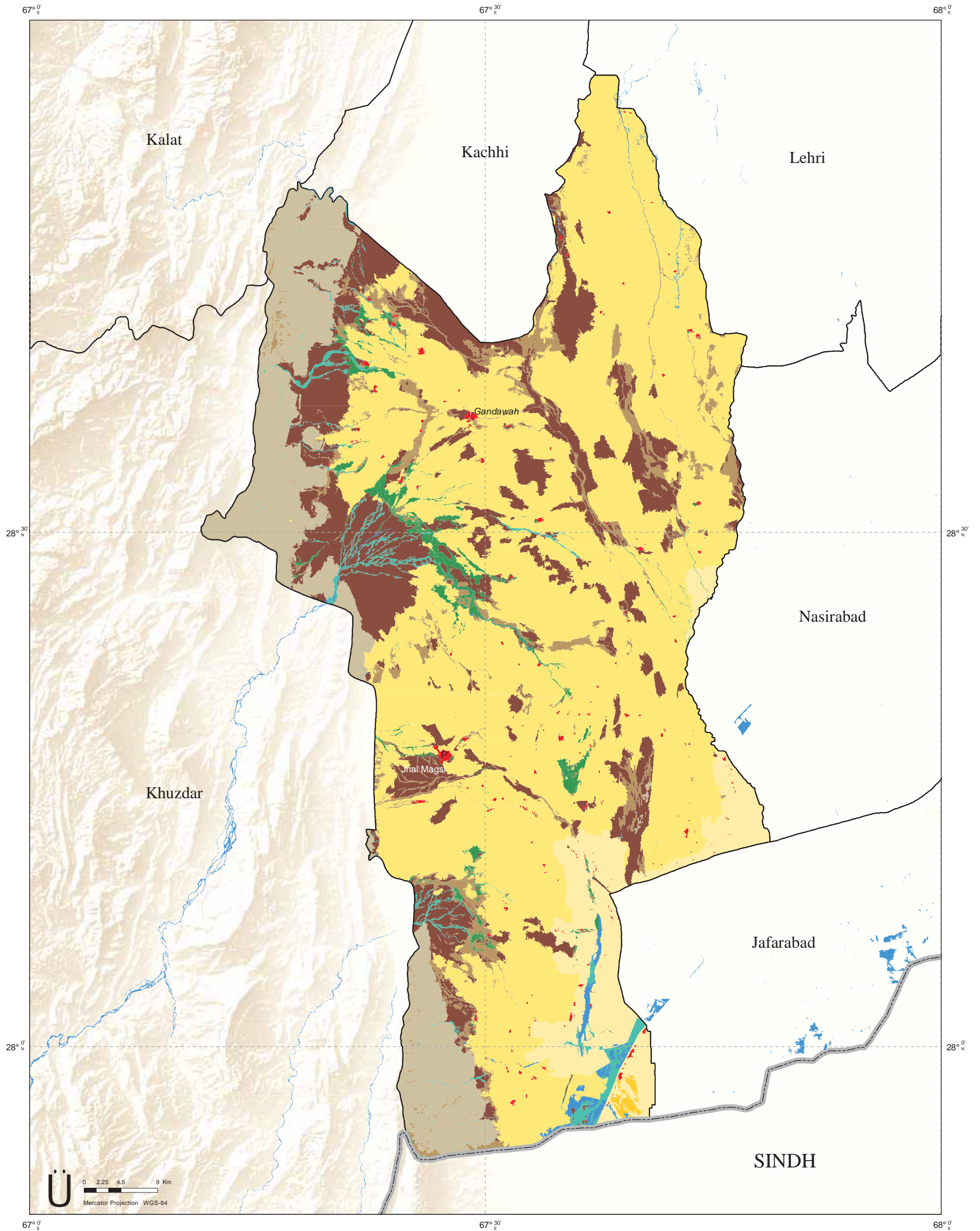
## LAND COVER IN PERCENTAGE



## DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.00	0.0
Crop Irrigated	254.93	6.6
Crop Marginal and Irrigated Saline	7.05	0.2
Crop in Flood Plain	0.00	0.0
Crop Rainfed	2,212.75	57.4
Forest - Natural Trees and Mangroves	67.69	1.8
Natural Vegetation in Wet Areas	51.70	1.3
Range Lands - Natural Shrubs and Herbs	203.06	5.3
Built-up	17.85	0.5
Bare Areas	595.70	15.5
Bare Areas with Sparse Natural Vegetation	424.46	11.0
Wet Areas	20.09	0.5
Snow and Glaciers	0.00	0.0
Grand Total	3,855.28	







KACHHI

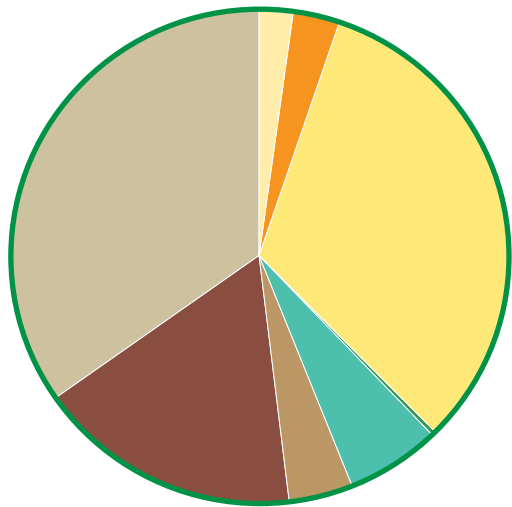
Kachhi, previously known as Bolan, was notified as a separate district in 1991. The district comprises of five tehsils namely, Bhag, Dhadar, Machh, Sani and Khattan. The district headquarter is located at Dhadar. It is home to Baloch, Brahui, Rind, Raisani, Shawani, Domki, Kurd and Syed ethnic groups. Balochi and Brahvi are the main spoken languages of this region . The climate is moderate in summer and cold in winter. The district produces wheat, barley, mustard, fodder, rice, sorgham, sesame, mung, mash, guar seed, cotton and vegetables. Major fruits include dates, mango, citrus and guava. Mehargarh is the famous archaeological site of this district.

INDEX MAP



Source: www.gettyimages.com

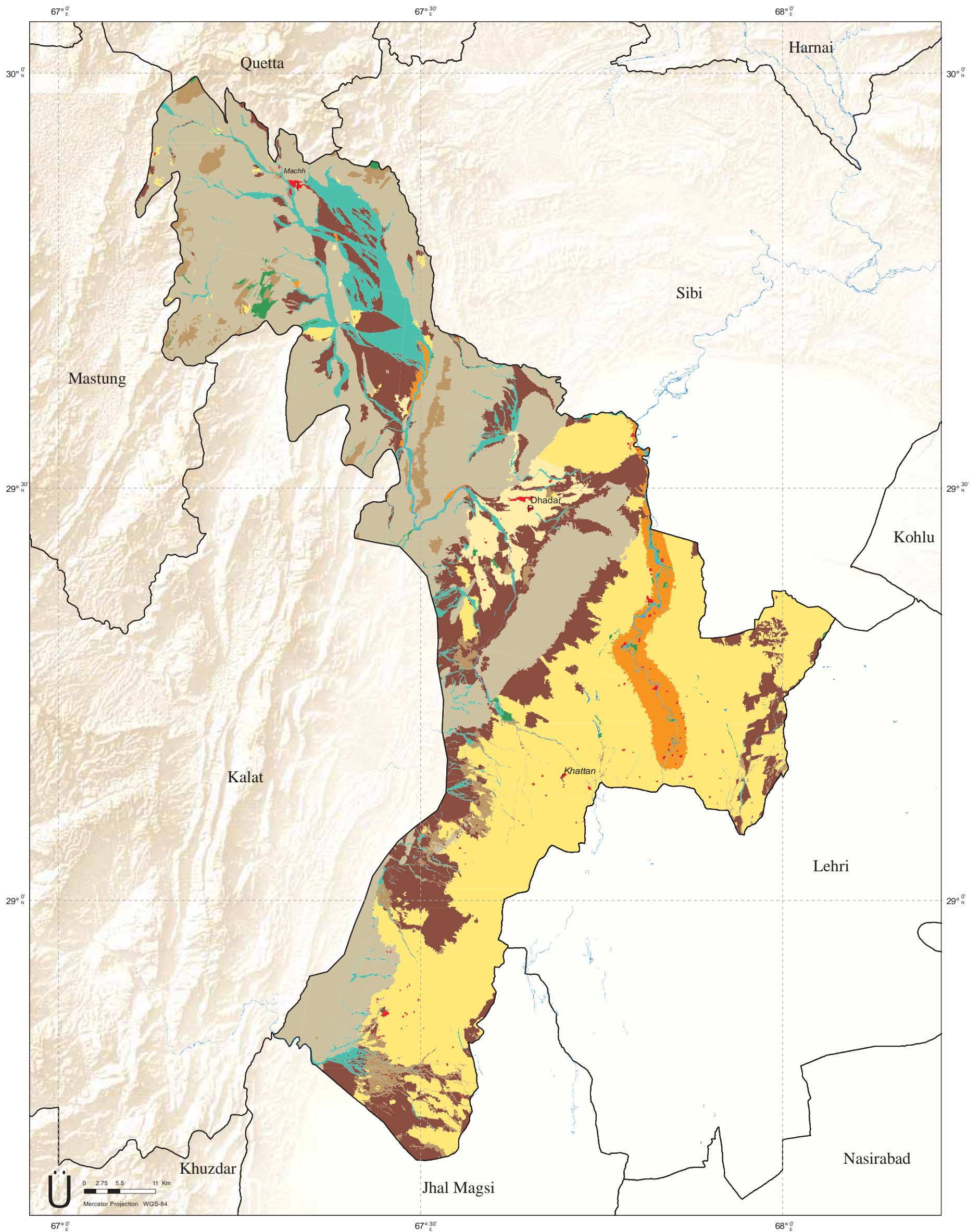
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.00	0.0
Crop Irrigated	107.18	2.4
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	134.20	3.0
Crop Rainfed	1,434.57	32.1
Forest - Natural Trees and Mangroves	23.47	0.5
Natural Vegetation in Wet Areas	265.08	5.9
Range Lands - Natural Shrubs and Herbs	185.34	4.2
Built-up	14.65	0.3
Bare Areas	762.09	17.1
Bare Areas with Sparse Natural Vegetation	1,529.11	34.3
Wet Areas	6.47	0.1
Snow and Glaciers	0.00	0.0
Grand Total	4,462.16	







KALAT

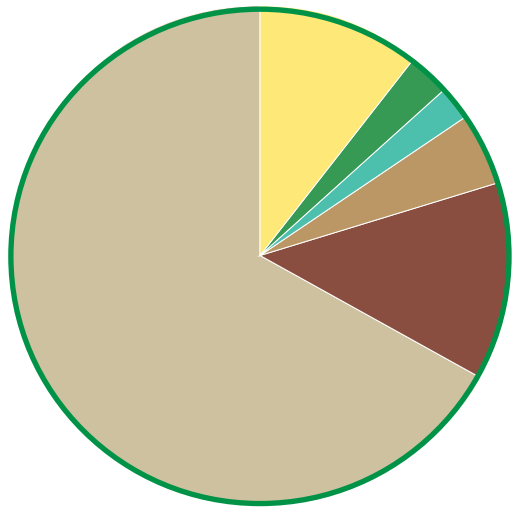
Kalat was notified as a separate district in 1954. It consists of three tehsils namely, Kalat, Surab and Mangocher. The district headquarter is located at Kalat city. It is home to Dehwar, Mengal, Pandrani, Mohammad Hasni, Shahwani, Bangulzai and Lehri tribes. Brahvi and Balochi are the main languages spoken here. The climate is mild in summer and cold with most rainfall in winter. The district mainly produces wheat, barley, cumin, lentil, fodder, sunflower, mung, mash, and vegetables. Major fruits include almond, apple, apricot, grapes, peach, plum, pear, pomegranate and cherry. Merry Count and Mir-e-Kalat Palace are famous sites. The district has major deposits of iron, copper and sulphur.

INDEX MAP



Source: Ameer Hamza

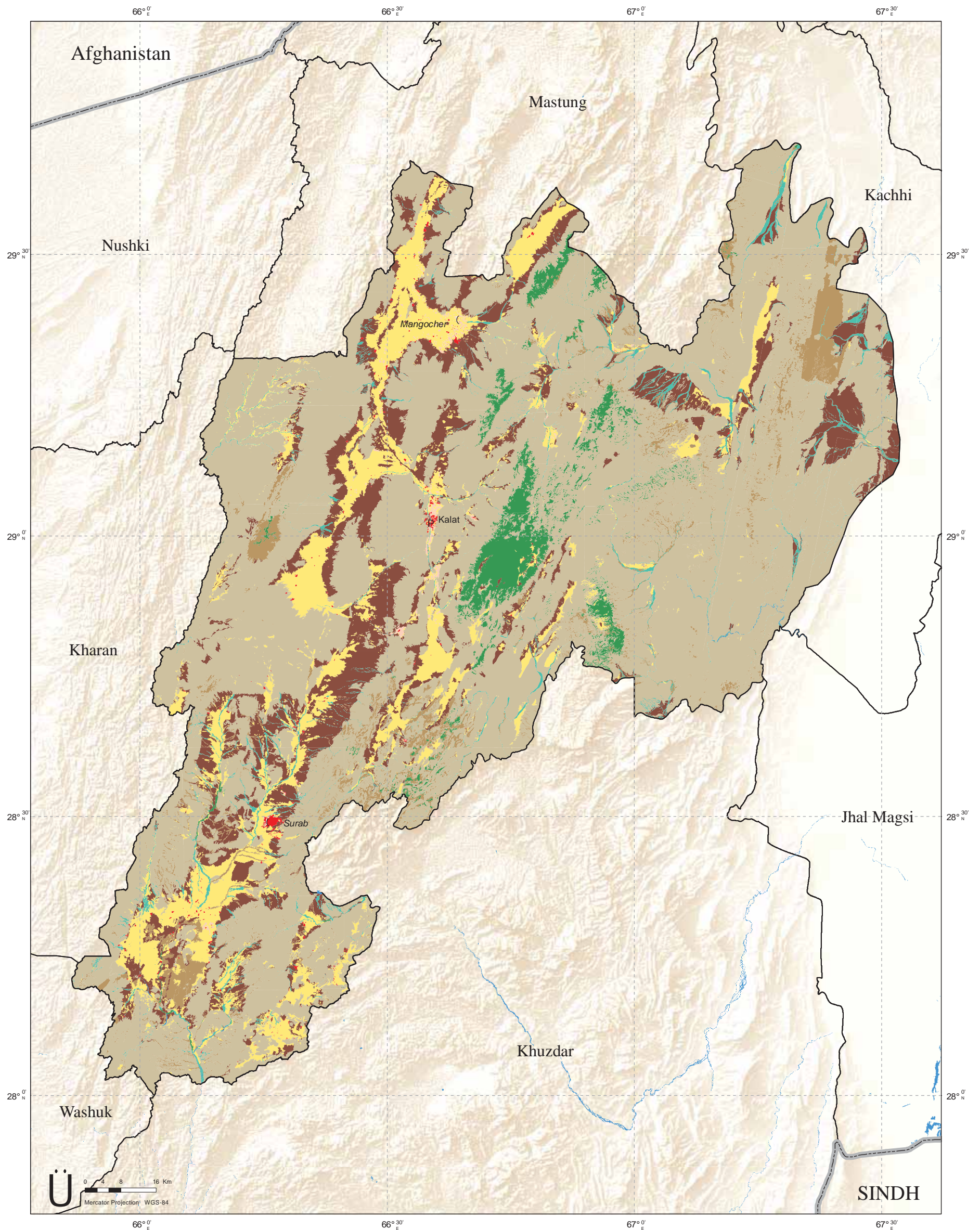
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	35.54	0.2
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.38	0.0
Crop Rainfed	1,532.26	10.6
Forest - Natural Trees and Mangroves	417.19	2.9
Natural Vegetation in Wet Areas	286.77	2.0
Range Lands - Natural Shrubs and Herbs	692.98	4.8
Built-up	37.51	0.3
Bare Areas	1,814.54	12.6
Bare Areas with Sparse Natural Vegetation	9,579.89	66.5
Wet Areas	3.02	0.0
Snow and Glaciers	0.00	0.0
Grand Total	14,400.08	







KECH

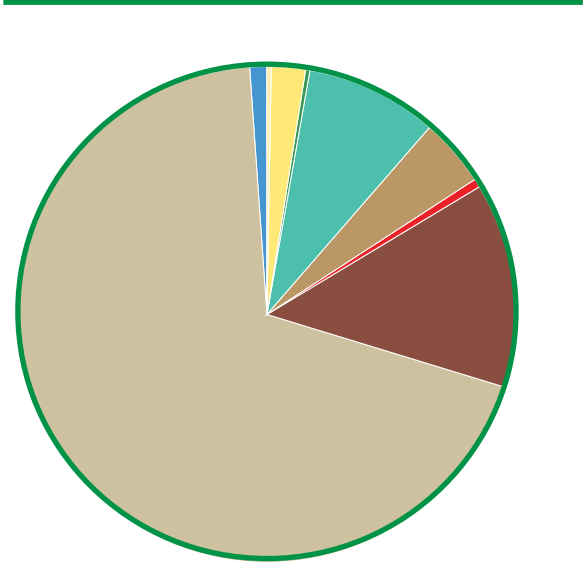
Kech previously known as Turbat was notified as a separate district in 1977. It consists of four tehsils namely, Buleda, Turbat, Tump and Dasht. The district headquarter is located at Turbat. It is home to Baloch people. Balochi and Urdu are the major spoken languages. The climate is hot in summer and mild in winter. The district mainly produces wheat, barley, mung, mash, cotton and vegetables. Major fruits include dates, pomegranate, grapes, papaya and chickoo. It is famous for the fort of Sassi-Pannu and Koh-e-Murad shrine.

INDEX MAP



Source: 500px.com

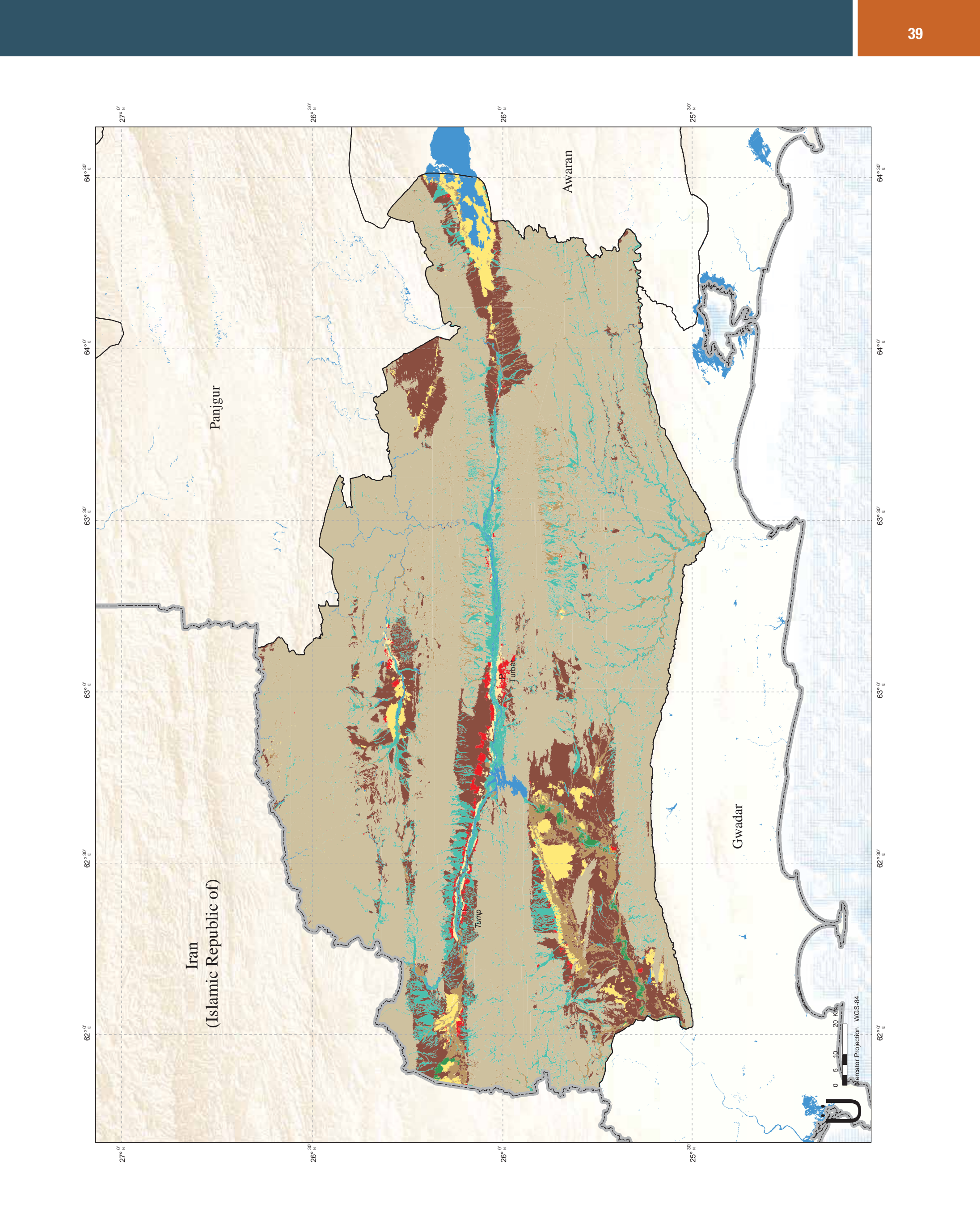
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.16	0.0
Crop Irrigated	87.95	0.4
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	3.89	0.0
Crop Rainfed	546.56	2.3
Forest - Natural Trees and Mangroves	62.87	0.3
Natural Vegetation in Wet Areas	2,024.60	8.6
Range Lands - Natural Shrubs and Herbs	1,001.53	4.3
Built-up	139.93	0.6
Bare Areas	3,123.41	13.3
Bare Areas with Sparse Natural Vegetation	16,227.82	69.3
Wet Areas	202.62	0.9
Snow and Glaciers	0.00	0.0
Grand Total	23,421.34	







KHARAN

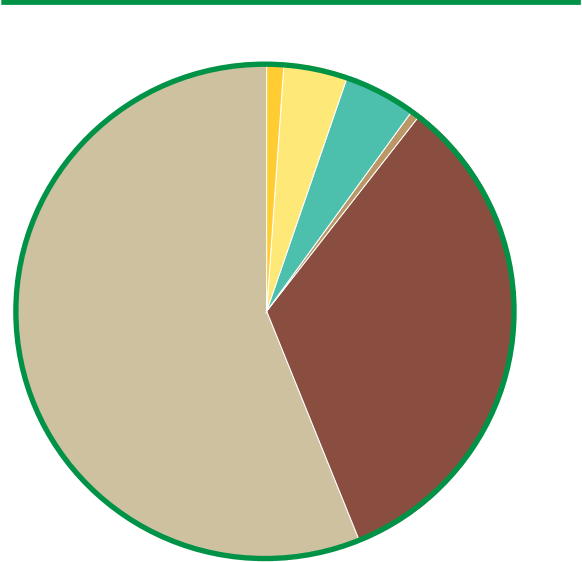
Kharan was notified as a separate district in 1952. It consists of two tehsils namely Kharan and Sur Kharan. The district headquarter is located at Kharan. It is home to Nausherwani, Rakhsani, Muhammad Hasni, Siapad, Kubdani and Mulazai tribes. Balochi is the main spoken language of this region. The climate is dry with dust storms throughout the year. Some major crops and fruits include wheat, barley, mustard, cumin, lentil, fodder, sunflower, sorghum, millet, maize, cotton, vegetables, almond, apple, apricot, grapes, peach, plum, pear, pomegranate, dates, citrus and chickoo. The district is popular for archaeological remains of Zoroastrian dams and Mausolea Tomb.

INDEX MAP



Source: [www.panoramio.com](http://www.panoramio.com)

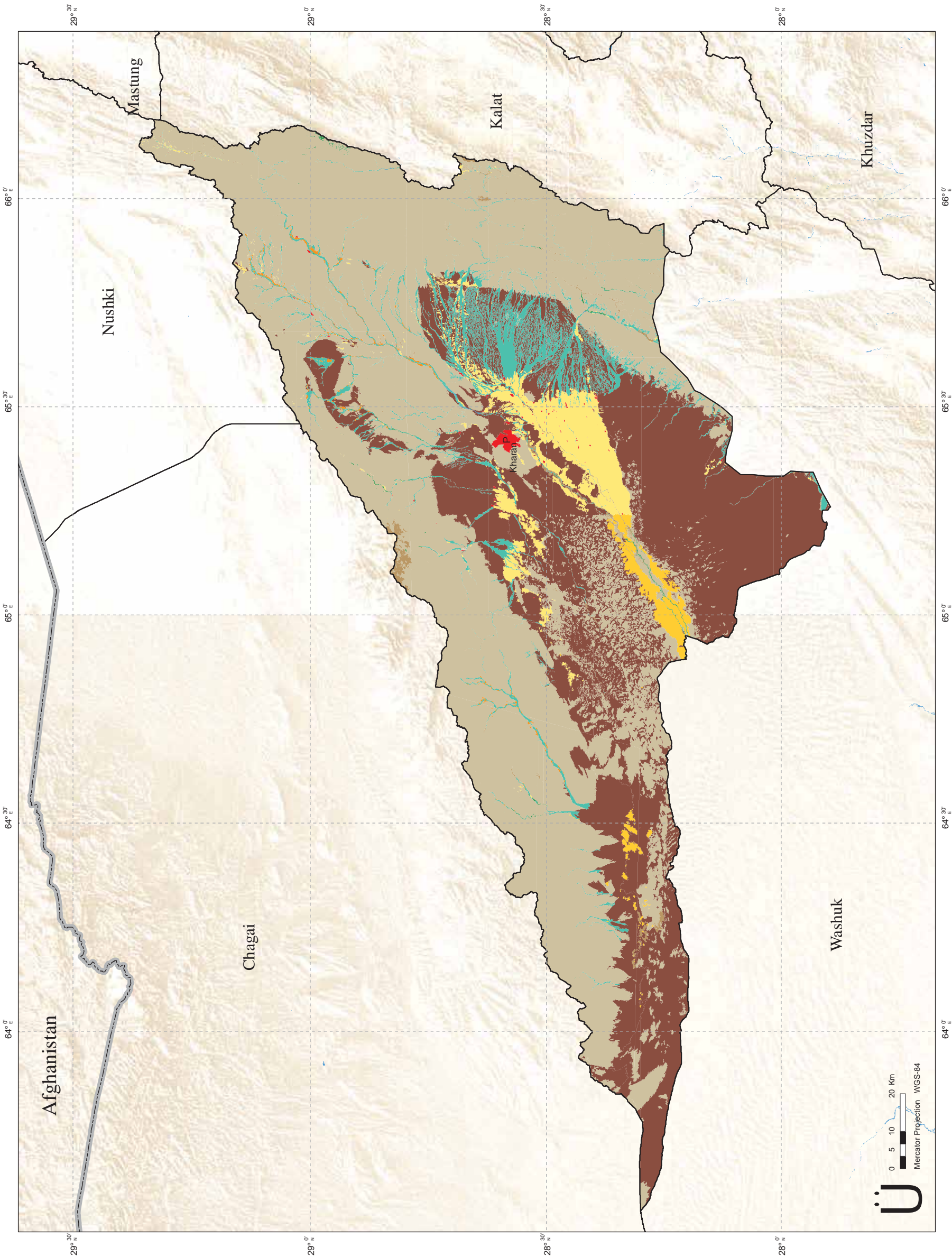
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.42	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	185.89	1.2
Crop in Flood Plain	44.67	0.3
Crop Rainfed	619.93	4.2
Forest - Natural Trees and Mangroves	17.07	0.1
Natural Vegetation in Wet Areas	682.34	4.6
Range Lands - Natural Shrubs and Herbs	95.26	0.6
Built-up	31.48	0.2
Bare Areas	4,932.81	33.1
Bare Areas with Sparse Natural Vegetation	8,285.07	55.6
Wet Areas	0.72	0.0
Snow and Glaciers	0.00	0.0
Grand Total	14,895.67	







# KHUZDAR

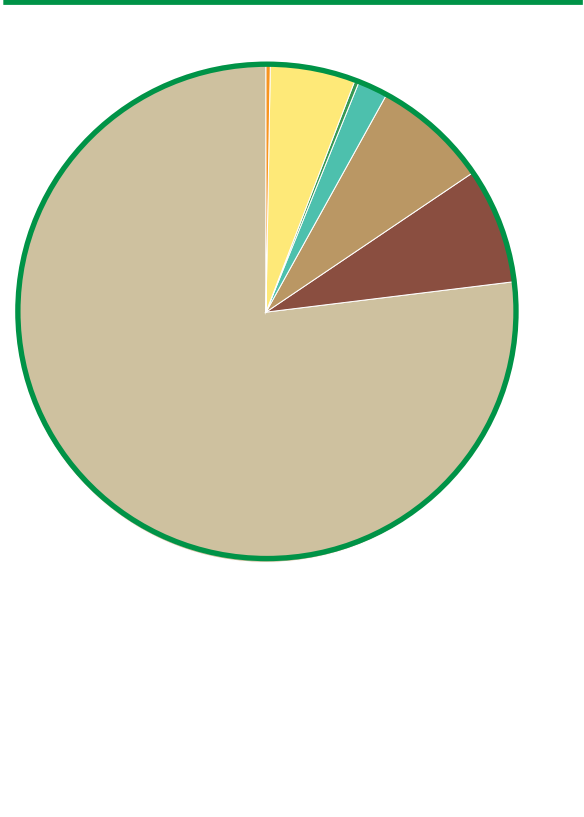
Khuzdar was notified as a separate district in 1974. It consists of four tehsils namely, Khuzdar, Nall, Wadh and Zehri. The district headquarter is located at Khuzdar. It is home to Bizenjo, Mardoi Jattak, Hasni, Nausherwani, Zehri, Mengal, Zarakzai and Ahmadzai tribes. The languages spoken include Brahvi, Balochi, Sindhi and Urdu. The climate is warm in summer and mild in winter. The district produces wheat, barley, pulses, millet, maize, sorghum, cotton and vegetables. Major fruits include grapes, almond, pomegranate, dates, citrus, guava, banana, pistachio and plum. Balochi embroidery and carpet knitting are famous here. It has major deposits of dunite, serpentinite, lead, zinc, chromite and manganese.

## INDEX MAP



Source: Majid Hussain

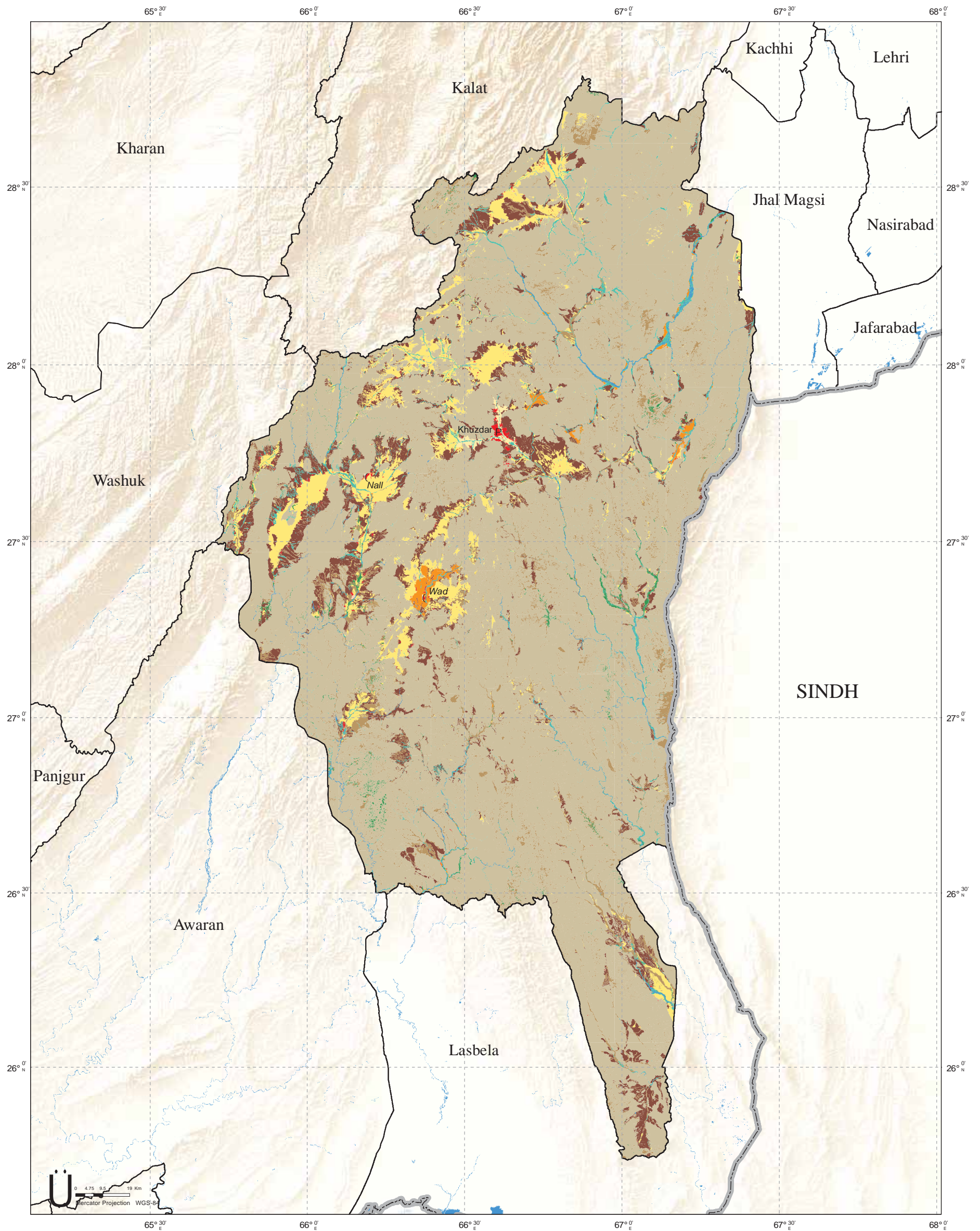
## LAND COVER IN PERCENTAGE



## DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	2.17	0.0
Crop Irrigated	40.86	0.1
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	143.92	0.5
Crop Rainfed	1,597.25	5.3
Forest - Natural Trees and Mangroves	160.88	0.5
Natural Vegetation in Wet Areas	575.72	1.9
Range Lands - Natural Shrubs and Herbs	2,183.73	7.3
Built-up	67.97	0.2
Bare Areas	2,244.23	7.5
Bare Areas with Sparse Natural Vegetation	22,955.87	76.4
Wet Areas	61.55	0.2
Snow and Glaciers	0.00	0.0
Grand Total	30,034.14	







KOHLU

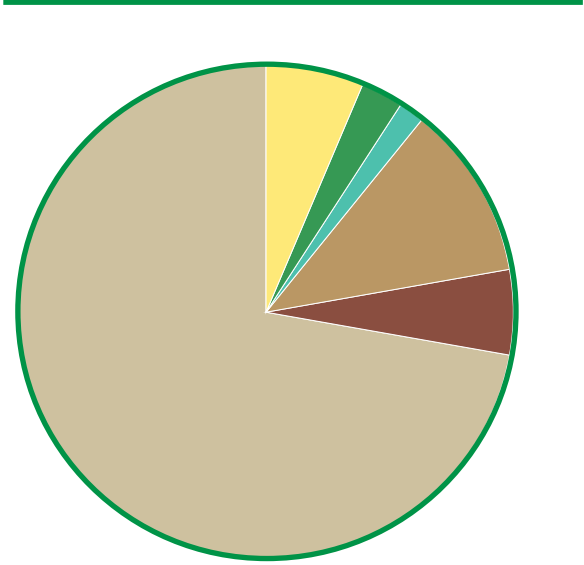
Kohlu also known as Marri’s land was notified as a district in 1974. It consists of three tehsils namely, Kohlu, Maiwand and Kahan. The district headquarter is located at Kohlu. It is home to mostly Baloch and Zarkoons. The spoken languages include Balochi, Brahvi, Pashto, Sindhi and Saraiki. The climate is is warm in summer and cold in winter. The district mainly produces wheat, barley, sorghum, millet, maize, mung, mash, onion, chillies, coriander, fodder and vegetables. Major fruits include almond, apple, grapes, and pomegranate. It has major deposits of fluorite, silica sand, gypsum, coal and marble.

INDEX MAP



Source: [www.flickr.com](http://www.flickr.com)

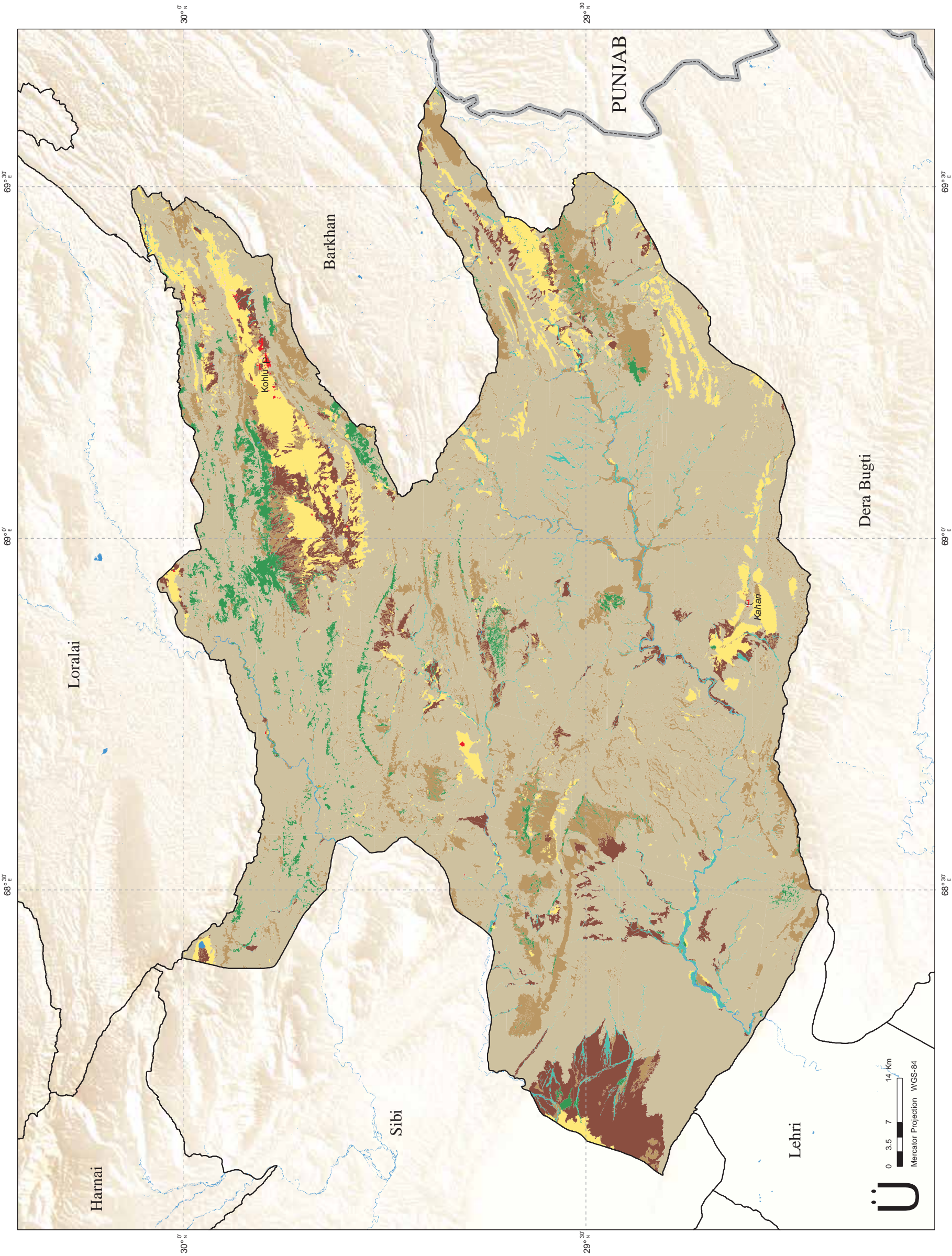
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.94	0.0
Crop Irrigated	0.64	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.13	0.0
Crop Rainfed	502.44	6.4
Forest - Natural Trees and Mangroves	228.62	2.9
Natural Vegetation in Wet Areas	131.11	1.7
Range Lands - Natural Shrubs and Herbs	899.37	11.4
Built-up	6.91	0.1
Bare Areas	433.71	5.5
Bare Areas with Sparse Natural Vegetation	5,679.96	71.9
Wet Areas	11.19	0.1
Snow and Glaciers	0.00	0.0
Grand Total	7,895.02	







LASBELA

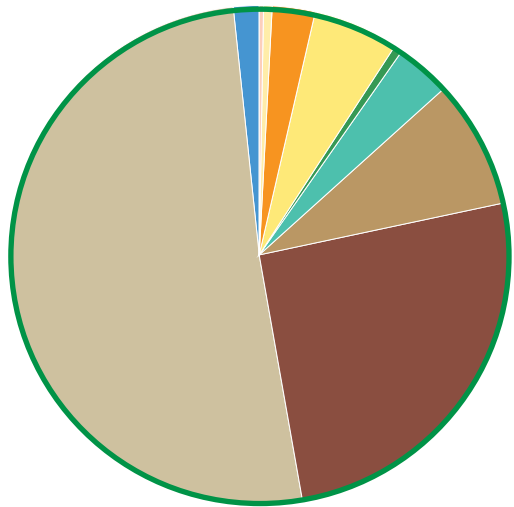
Lasbela is a coastal district and was established in 1954. The district consists of five tehsils namely, Bela, Dureji, Hub, Uthal and Gaddani. The district headquarter is located at Uthal. It is home to people of Baloch, Med, Khoja, Jamoot, Ranjhas and Sheikh ethnicities. Balochi, Brahvi, Sindhi, and Urdu are the languages spoken. Some major crops and fruits include wheat, barley, peas, sorghum, millet, maize, sesame, castor seed, mung bean, cotton, sugarcane, vegetables, coconut, papaya and chickoo. It also has major deposits of barite, red ocher, serpentinite, chromite, lead, zinc, manganese and dimension stone. Nani Mandir is a famous Hindu temple in Hinglaj town.

INDEX MAP



Source: SM Rafiq

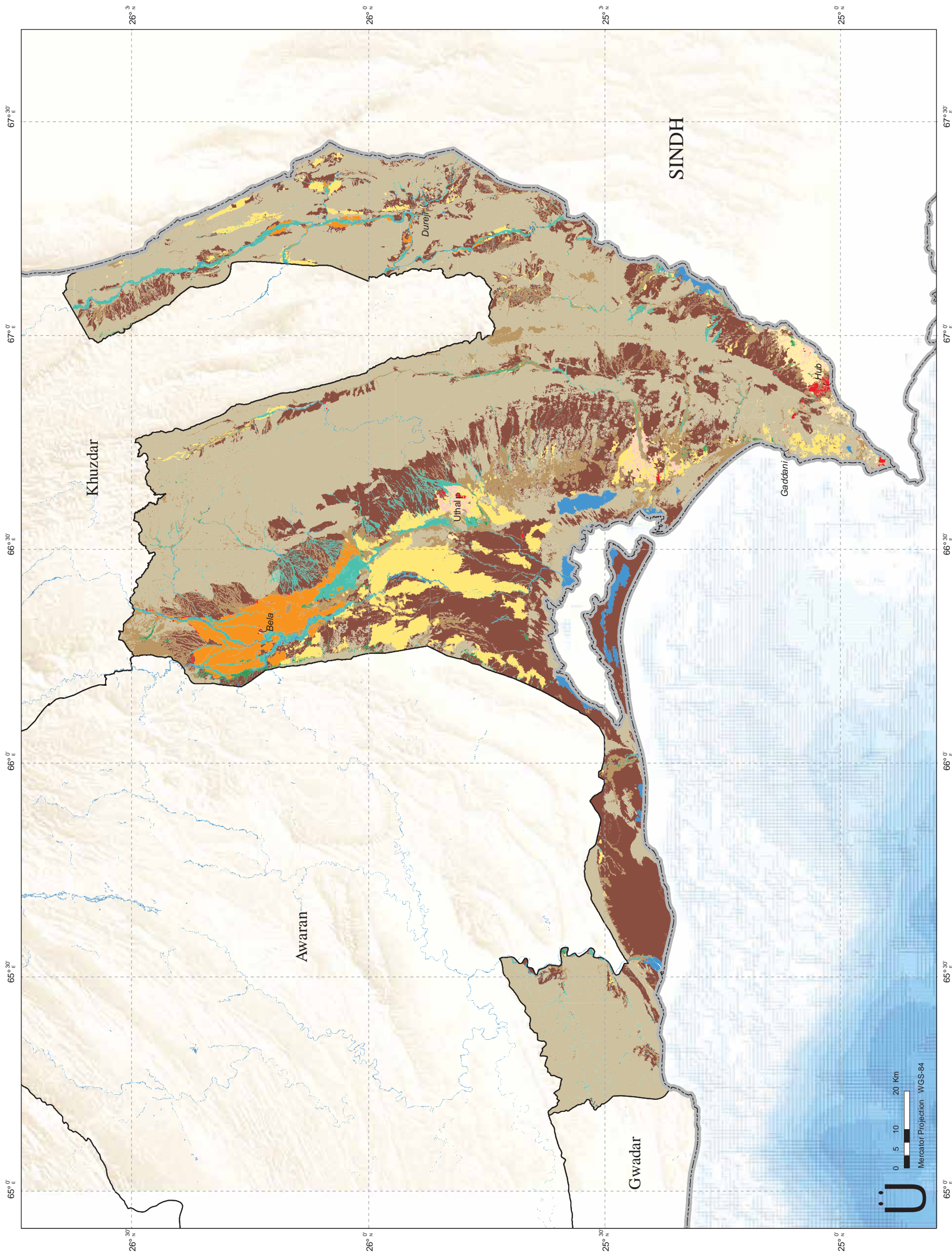
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	68.44	0.5
Crop Irrigated	96.21	0.7
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	364.66	2.5
Crop Rainfed	845.43	5.7
Forest - Natural Trees and Mangroves	63.59	0.4
Natural Vegetation in Wet Areas	534.63	3.6
Range Lands - Natural Shrubs and Herbs	1,257.60	8.5
Built-up	37.25	0.3
Bare Areas	3,750.53	25.5
Bare Areas with Sparse Natural Vegetation	7,480.32	50.8
Wet Areas	232.80	1.6
Snow and Glaciers	0.00	0.0
Grand Total	14,731.46	



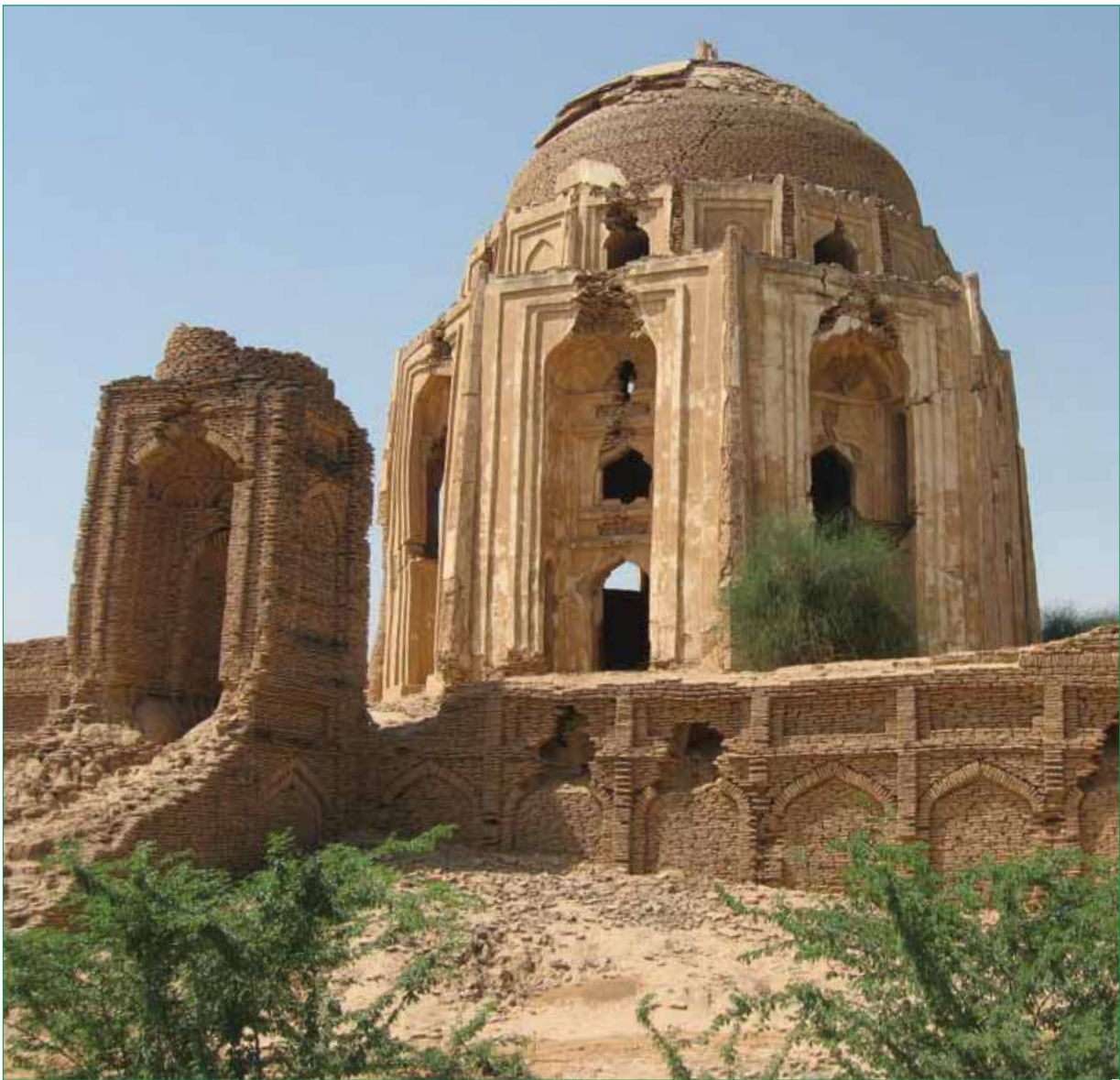




LEHRI

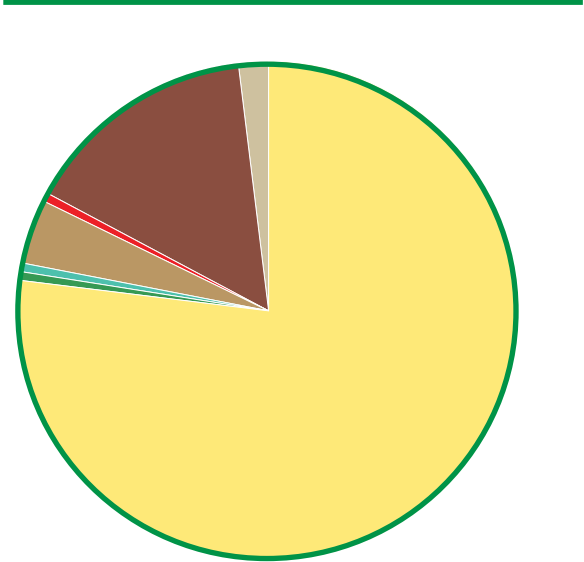
Lehri district was created in 2013. It consists of two tehsils namely, Bhag and Lehri. The district headquarter is located at Lehri. It shares border with Nasirabad, Jafarabad, Dera Bugti, Jacobabad and Kashmore. The climate is constituted of warm summer and cool winter. Some major crops include wheat, barley, cumin, lentil, sorghum, millet, maize, mung bean, cotton and vegetables. Major fruits include dates, pomegranate, grapes and Mango. It is famous for its various archaeological sites such as Band-e-Gillar, Kuhna Kalat and Fort of Nawab Habibullah Khan. It has major deposits of limestone, antimony and sulphur.

INDEX MAP



Source: CRS Balochistan

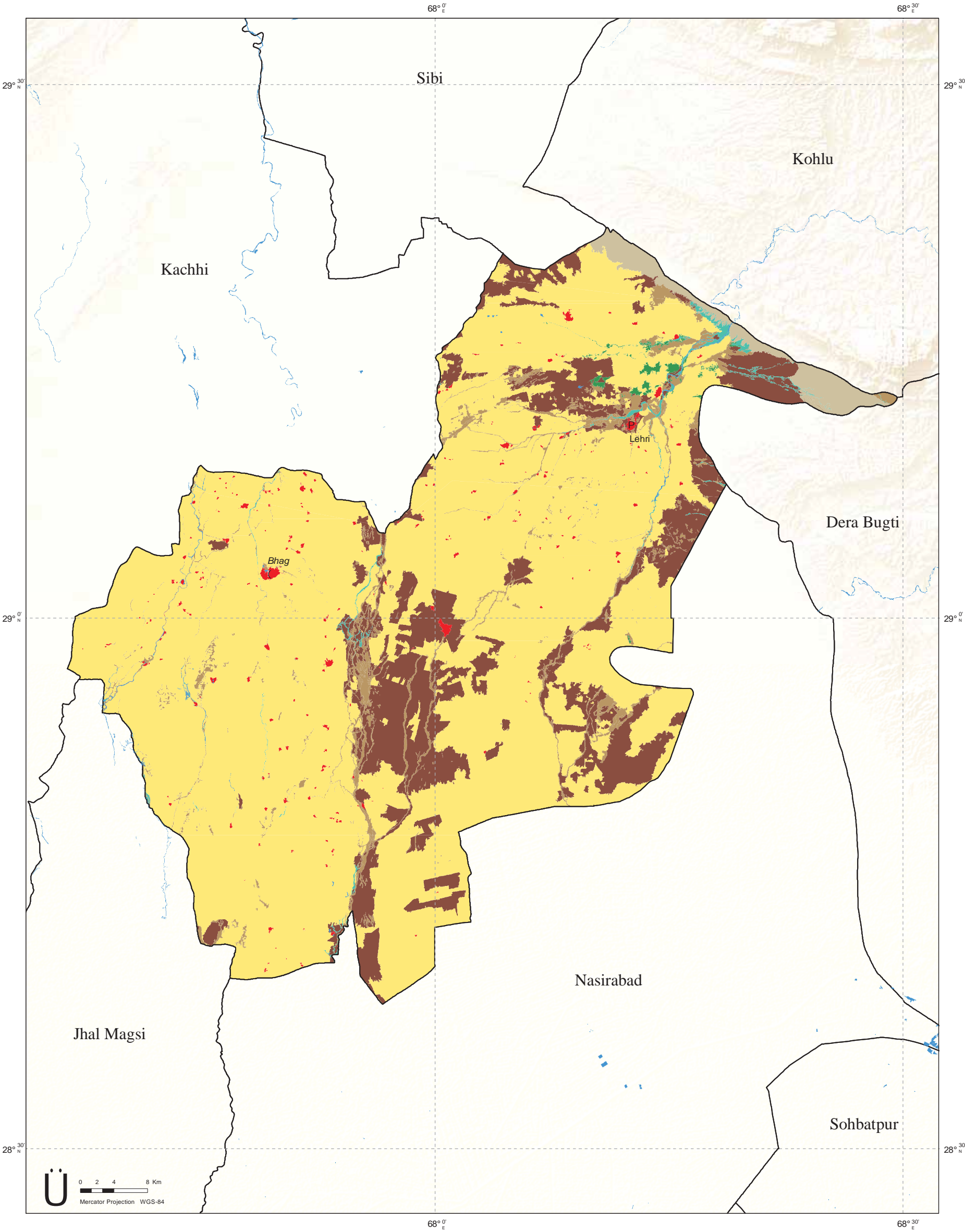
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.00	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.00	0.0
Crop Rainfed	2,407.40	77.2
Forest - Natural Trees and Mangroves	9.47	0.3
Natural Vegetation in Wet Areas	17.68	0.6
Range Lands - Natural Shrubs and Herbs	130.15	4.2
Built-up	20.39	0.7
Bare Areas	470.74	15.1
Bare Areas with Sparse Natural Vegetation	60.53	1.9
Wet Areas	3.04	0.1
Snow and Glaciers	0.00	0.0
Grand Total	3,119.40	







LORALAI

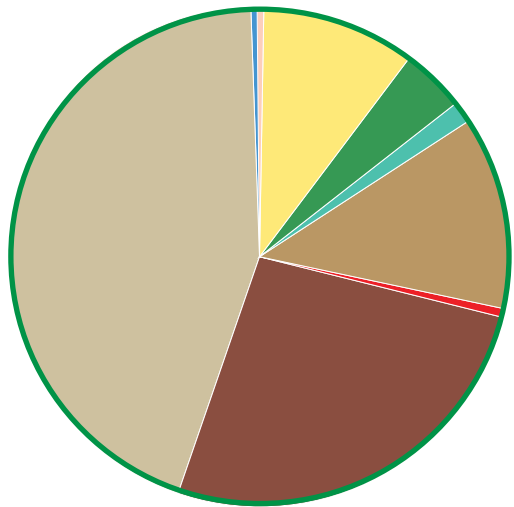
Loralai was notified as a separate district in 1903. It consists of three tehsils namely Duki, Bori and Mekhter with district headquarter at Loralai. It is mainly home to Kakar, Luni, Tareen, and Nasar tribes. Pashto and Balochi are the main spoken languages. Winters are very cold and windy whereas summers are mild. The district mainly produces wheat, barley, cumin, chickpea, peas, lentil, sorghum, millet, maize, mung, mash beans, cotton, fodder and vegetables. Major fruits include apple, apricot, almond, grapes, peach, plum, pomegranate, pistachio and cherry. It has major deposits of coal, marble, fluorite, sand, talc, gypsum, anhydrite and limestone. It is famous for ‘Chakan’ handicraft.

INDEX MAP



Source: panoramio.com

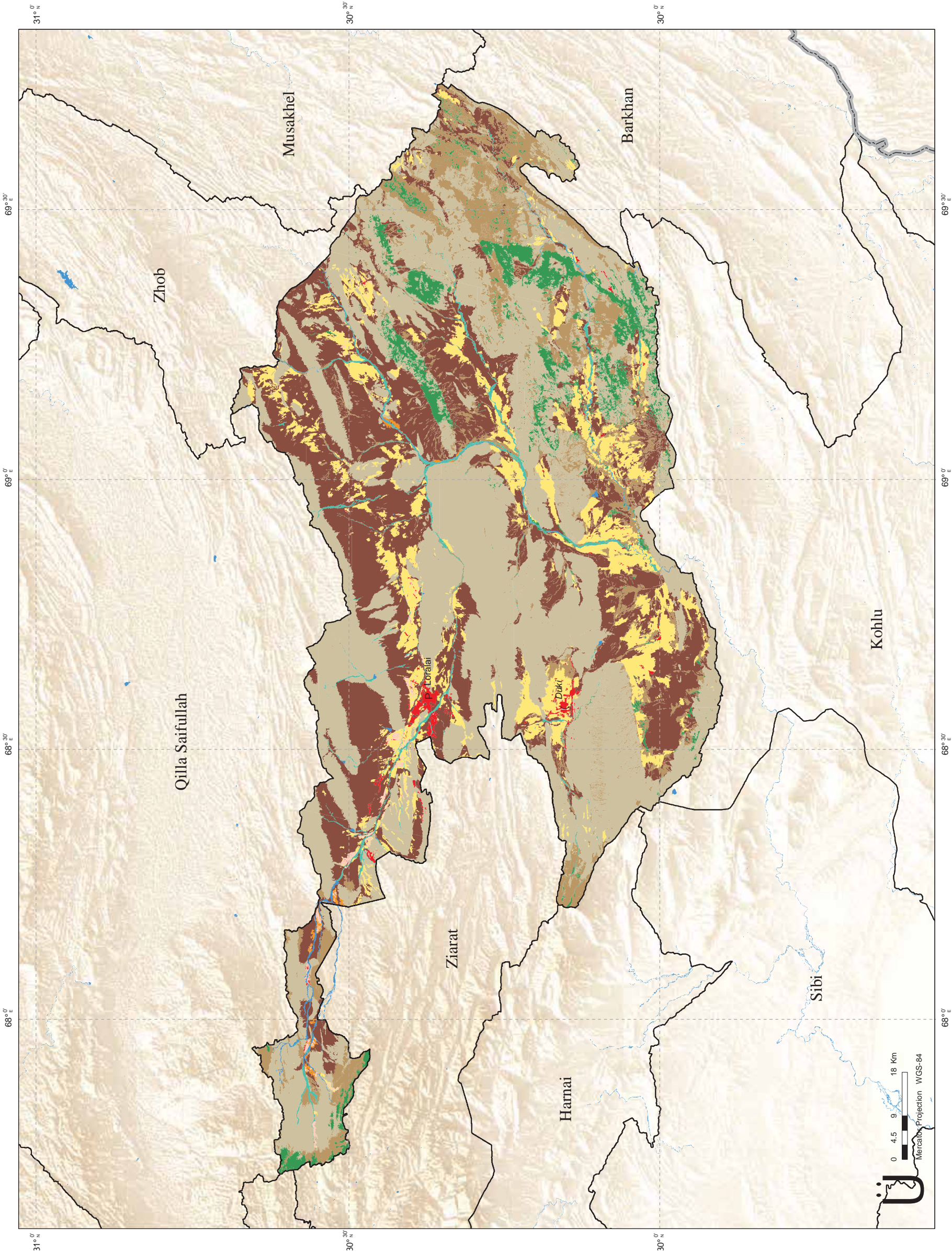
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	32.71	0.4
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	12.20	0.2
Crop Rainfed	802.94	9.9
Forest - Natural Trees and Mangroves	357.16	4.4
Natural Vegetation in Wet Areas	116.28	1.4
Range Lands - Natural Shrubs and Herbs	999.39	12.3
Built-up	53.05	0.7
Bare Areas	2,138.06	26.3
Bare Areas with Sparse Natural Vegetation	3,602.03	44.3
Wet Areas	20.77	0.3
Snow and Glaciers	0.00	0.0
Grand Total	8,134.58	







MASTUNG

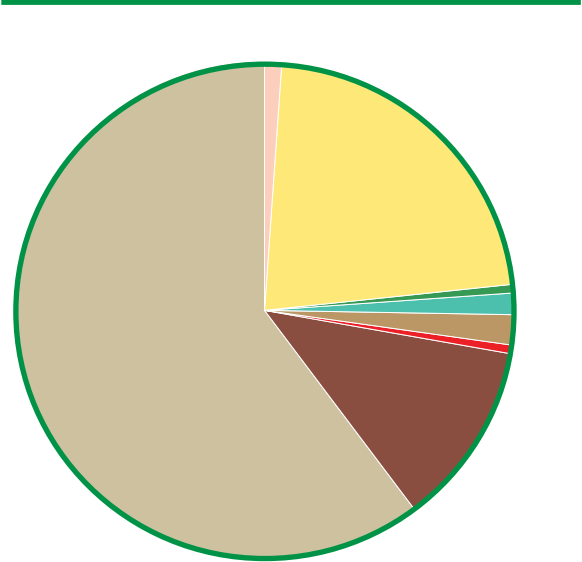
Mastung was notified as a separate district in 1992. The district has three tehsils namely, Dasht, Kardigap and Mastung. The district headquarter is located at Mastung. It is home to Brahui, Dehwar, Khawajakhail and Pashtun tribes. The climate is hot in summer with scanty rainfall and mild to cold in winter with snowfalls in Mastung and Dasht valleys. The district mainly produces wheat, barley, cumin, sunflower, fodder and vegetables. Some major fruits include apricot, almond, apple, peach, grapes, plum, pear, pomegranate, cherry and pistachio. It has major deposits of fluorite, iron ore and limestone.

INDEX MAP



Source: summitpost.org

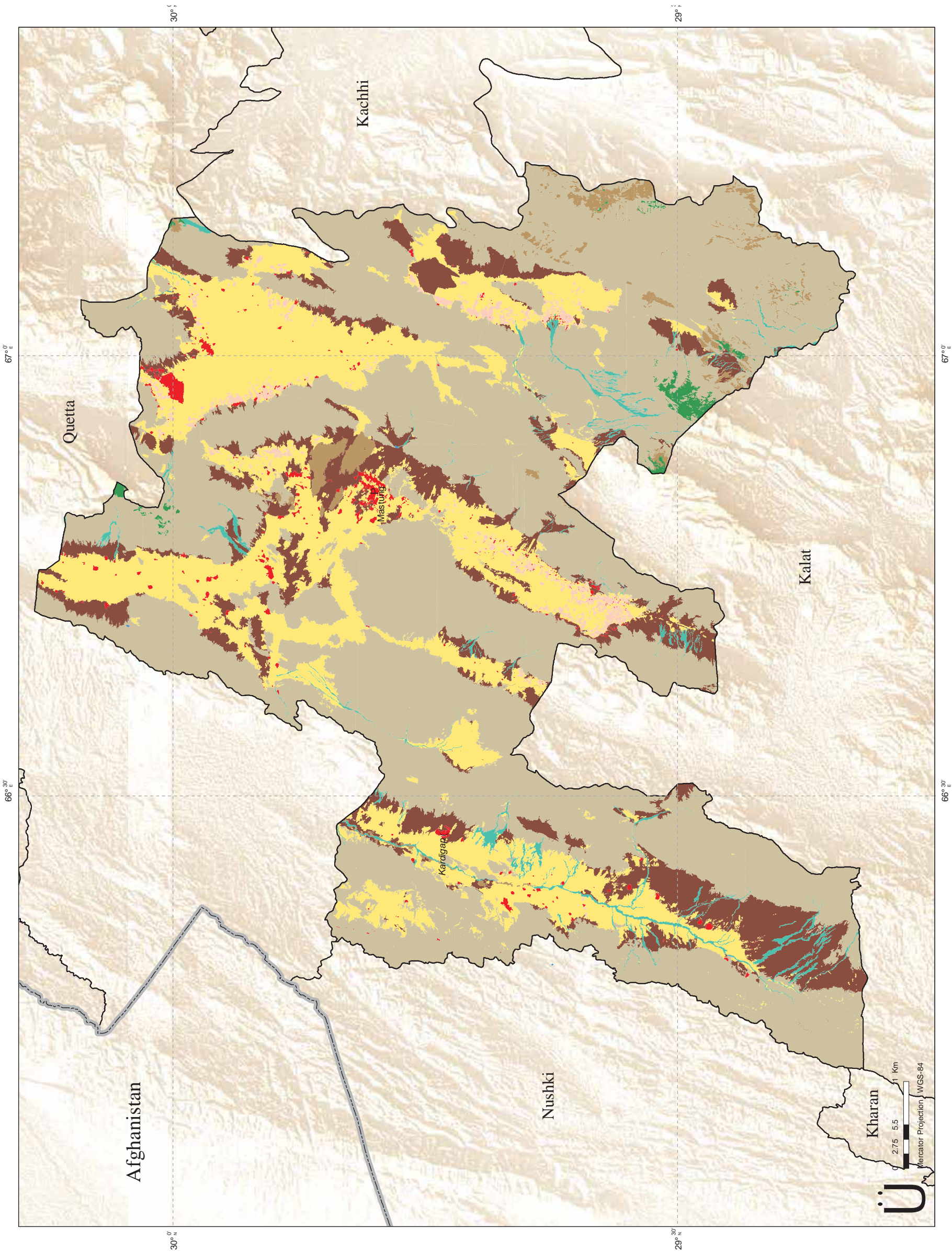
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	58.30	1.2
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.12	0.0
Crop Rainfed	1,061.35	22.2
Forest - Natural Trees and Mangroves	23.77	0.5
Natural Vegetation in Wet Areas	73.76	1.5
Range Lands - Natural Shrubs and Herbs	84.51	1.8
Built-up	40.44	0.8
Bare Areas	567.30	11.9
Bare Areas with Sparse Natural Vegetation	2,877.21	60.1
Wet Areas	0.12	0.0
Snow and Glaciers	0.00	0.0
Grand Total	4,786.87	







MUSAKHEL

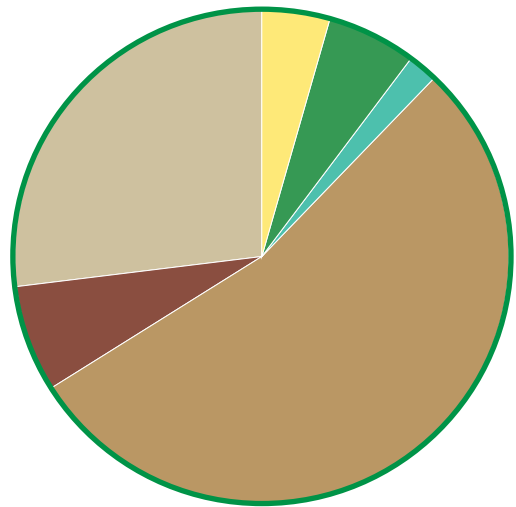
Musakhel was notified as a separate district in 1992. It consists of four tehsils namely, Darug, Kingri, Musakhel and Toisar. The district headquarter is located at Musakhel city. It is home to Musakhel, Baloch, Pashtun and Saraiki tribes. Pushto, Balochi, Jafferki and Saraiki are the main languages spoken there. Some major crops include wheat, barley, mustard, sorghum, millet, maize, fodder, and vegetables like potatoes, onions, chillies etc. Fruits include melon, apple, apricot, pomegranate and almond. It's famous historical places include Sali Archaeological sites, Safari Valley and Torghar forest. It has major deposits of coal, gypsum and silica sand.

INDEX MAP



Source: flickr.com

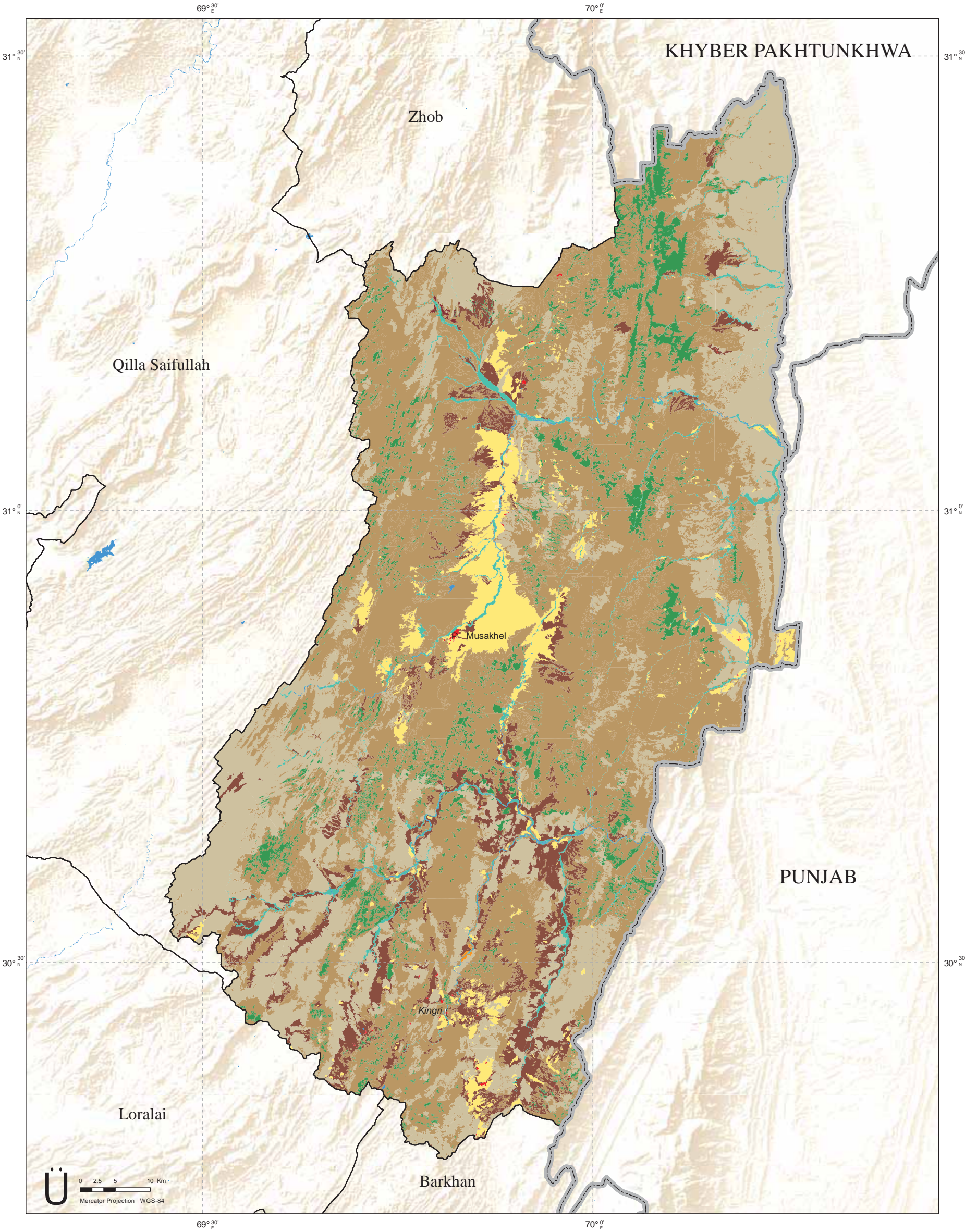
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.22	0.0
Crop Irrigated	0.73	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.91	0.0
Crop Rainfed	274.84	4.7
Forest - Natural Trees and Mangroves	335.26	5.8
Natural Vegetation in Wet Areas	108.73	1.9
Range Lands - Natural Shrubs and Herbs	3,110.03	53.7
Built-up	3.44	0.1
Bare Areas	406.47	7.0
Bare Areas with Sparse Natural Vegetation	1,543.50	26.7
Wet Areas	7.18	0.1
Snow and Glaciers	0.00	0.0
Grand Total	5,791.30	







NASIRABAD

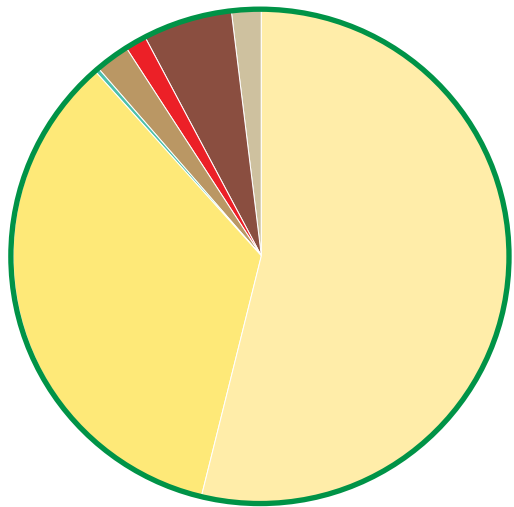
Nasirabad was created in 1974. It consists of four tehsils namely, Dera Murad Jamali, Chhatter, Tamboo and Baba Kot. The district headquarter is located at Dera Murad Jamali. It is home to Baloch, Jat, Brahui, Jamali, Bhangar, Manjhoo, Khosa, Mastoi, Sindhi, Saraiki, and Mangrio tribes. The climate is extremely hot and humid in summer and pleasant in winter. Dust storms are common during summer. The district mainly produces wheat, barley, mustard, gram, beans, lentil, rice, millet, sesame, mung, sugarcane, cotton and vegetables. Major fruits include citrus, chickoo and mango. It is famous for its embroidery work, needle work, mats and sheet designing.

INDEX MAP



Source: CRS Balochistan

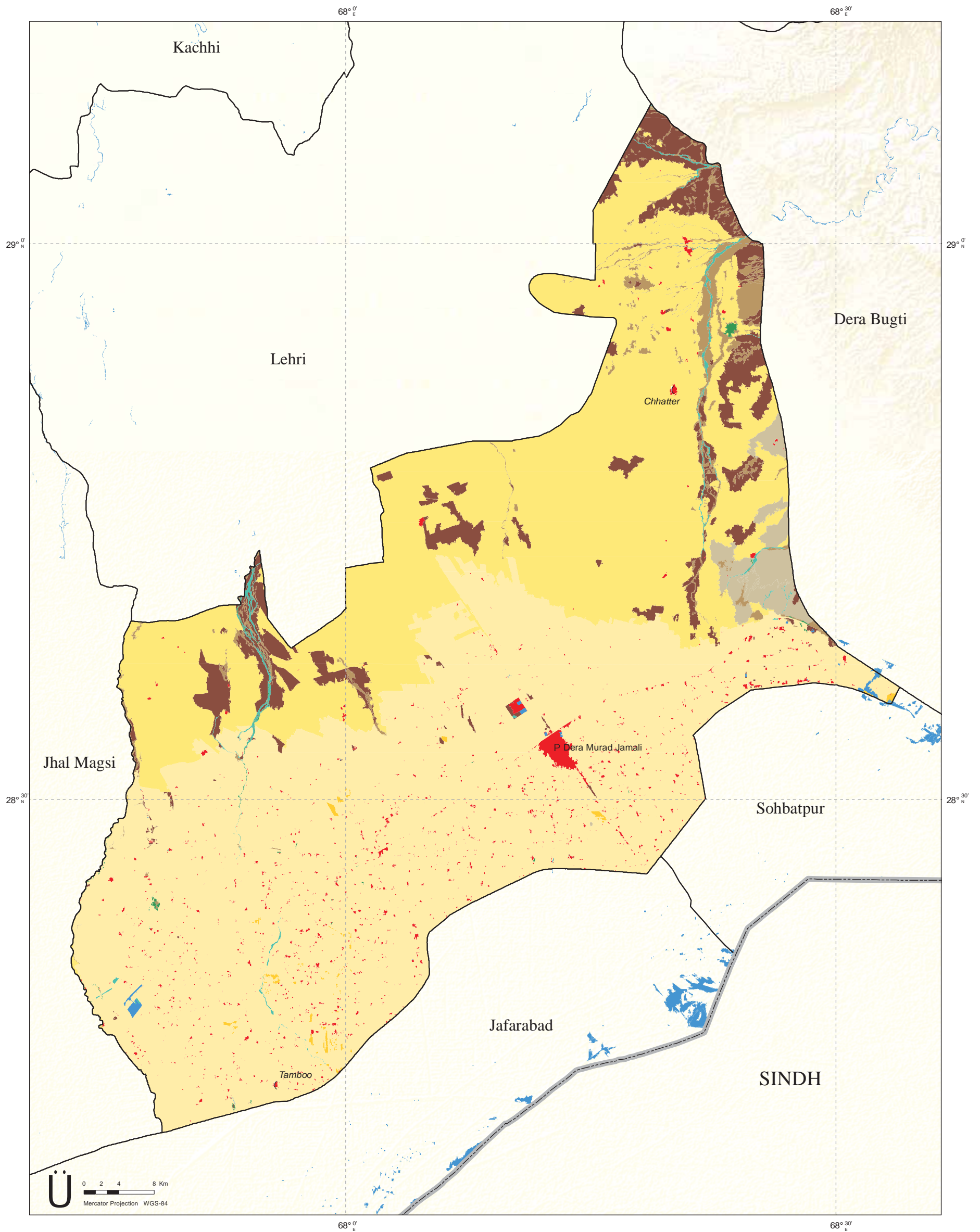
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.08	0.0
Crop Irrigated	1,915.12	53.9
Crop Marginal and Irrigated Saline	7.72	0.2
Crop in Flood Plain	0.00	0.0
Crop Rainfed	1,211.24	34.1
Forest - Natural Trees and Mangroves	3.64	0.1
Natural Vegetation in Wet Areas	15.67	0.4
Range Lands - Natural Shrubs and Herbs	80.33	2.3
Built-up	46.00	1.3
Bare Areas	206.85	5.8
Bare Areas with Sparse Natural Vegetation	63.16	1.8
Wet Areas	3.77	0.1
Snow and Glaciers	0.00	0.0
Grand Total	3,553.59	







NUSHKI

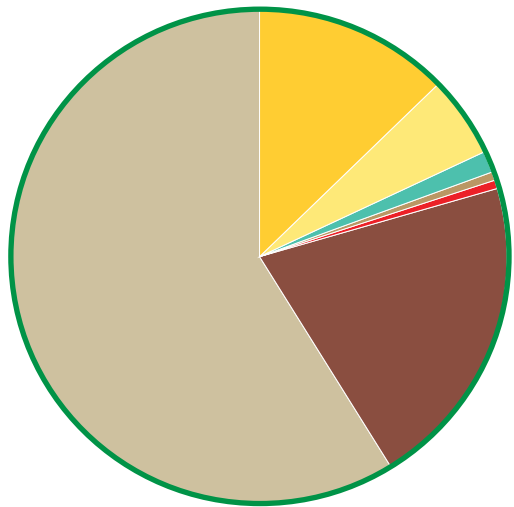
The Nushki district was notified as a separate district in 2004. It consists of one tehsil with the district headquarter at Nushki. It is home to mostly Baloch and Brahui. The climate of Nushki district is extremely hot in summer and severely cold in winter with irregular rainfalls. Some major crops and fruits include wheat, barley, mustard, cumin, lentil, sunflower, millet, maize, mung, mash, chillies, coriander, cotton, dates, almond, apricot, grapes, peach, plum, pear and pomegranate. Famous archaeological sites include Zangi-Nawar and Khanuwal. It has major deposits of chromites and graphite.

INDEX MAP



Source: Nadeem Khawar

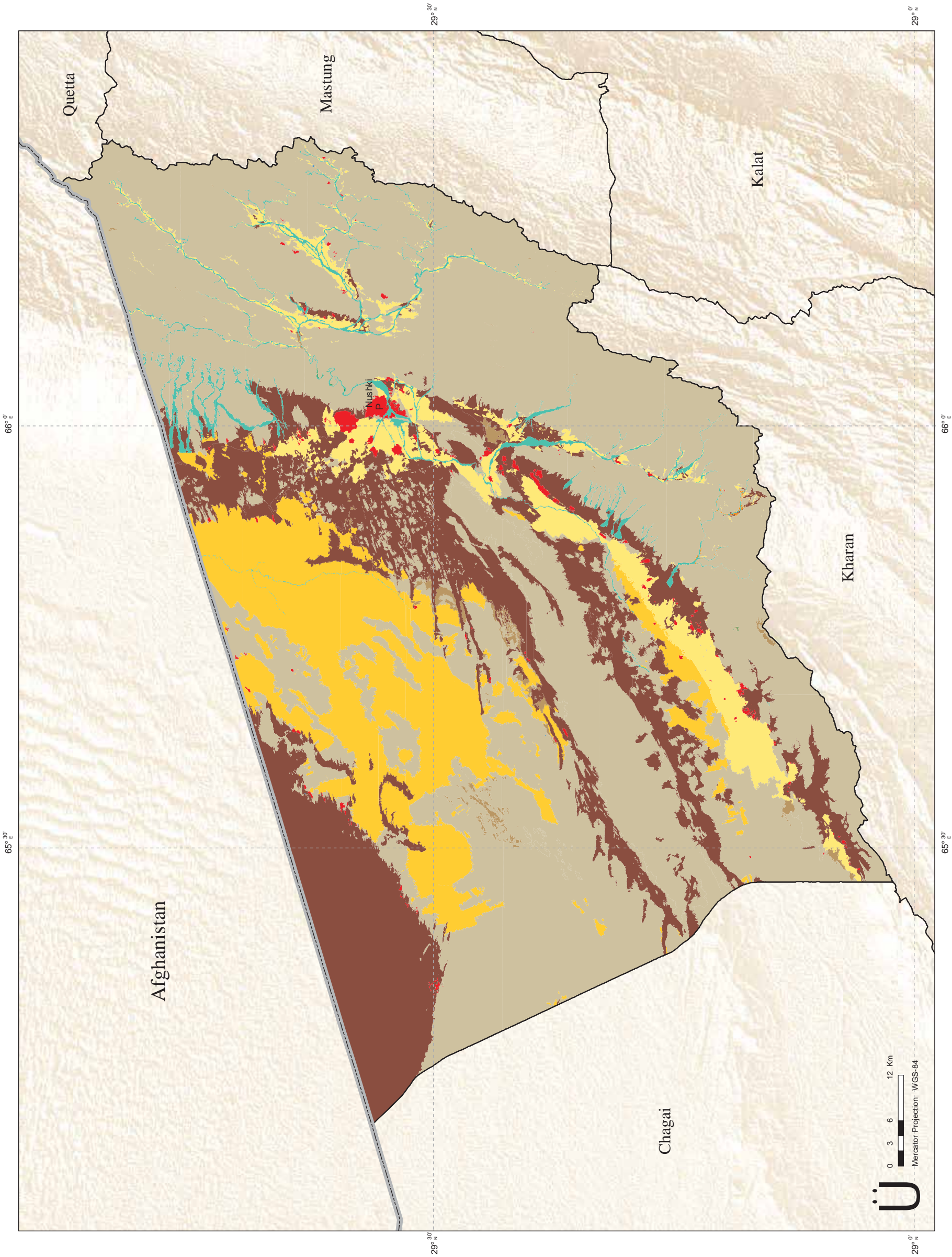
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.02	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	758.44	13.0
Crop in Flood Plain	1.05	0.0
Crop Rainfed	298.23	5.1
Forest - Natural Trees and Mangroves	0.44	0.0
Natural Vegetation in Wet Areas	87.42	1.5
Range Lands - Natural Shrubs and Herbs	35.57	0.6
Built-up	33.98	0.6
Bare Areas	1,195.50	20.5
Bare Areas with Sparse Natural Vegetation	3,420.22	58.7
Wet Areas	0.05	0.0
Snow and Glaciers	0.00	0.0
Grand Total	5,830.92	







PANJGUR

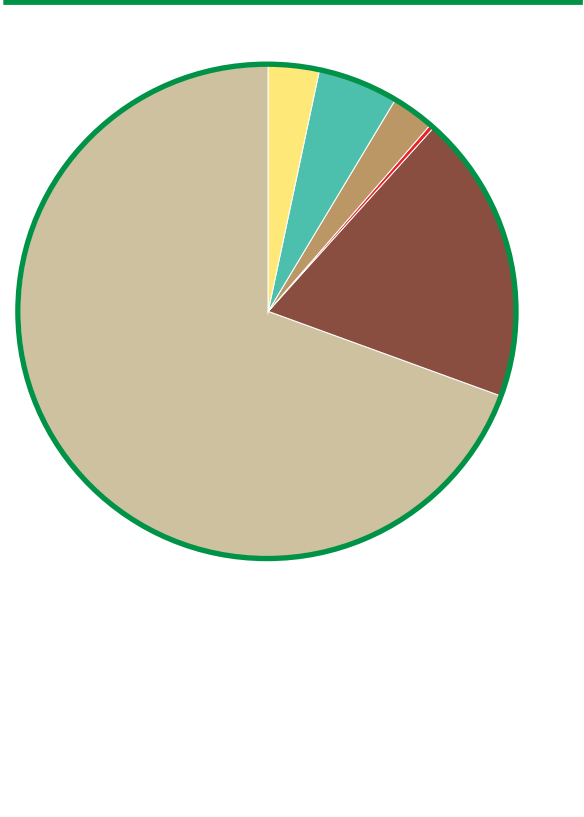
Panjgur is derived from Iranian language, where ‘Panj’, ‘Gor’ means ‘five graves’. It was notified as a separate district in 1977. It consists of three tehsils namely, Paroom, Panjgur and Gichk. The district headquarter is located at Panjgur. It is home to Baloch people. The climate is constituted of warm summer and cool winter. Some major crops include wheat, barley, cumin, lentil, sorghum, millet, maize, pulses and vegetables. Major fruits include dates, pomegranate, grapes and peach. It is famous for its various archaeological sites such as Band-e-Gillar, Kuhna Kalat and Fort of Nawab Habibullah Khan. It has major deposits of limestone, antimony and sulphur.

INDEX MAP



Source: twitter.com

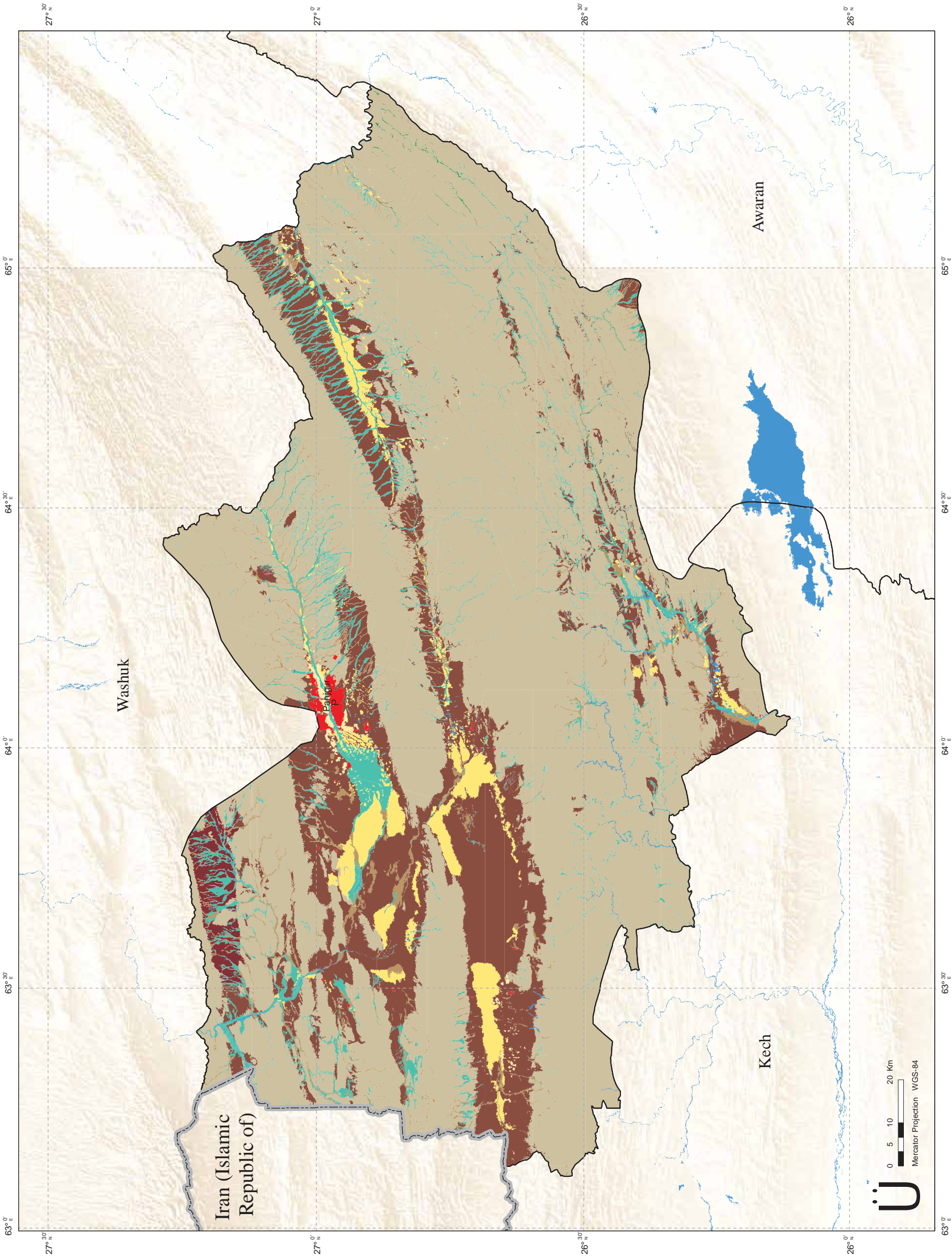
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.19	0.0
Crop Irrigated	40.04	0.2
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	1.03	0.0
Crop Rainfed	585.50	3.4
Forest - Natural Trees and Mangroves	24.71	0.1
Natural Vegetation in Wet Areas	909.59	5.3
Range Lands - Natural Shrubs and Herbs	479.43	2.8
Built-up	55.27	0.3
Bare Areas	3,232.22	18.8
Bare Areas with Sparse Natural Vegetation	11,863.99	68.9
Wet Areas	36.12	0.2
Snow and Glaciers	0.00	0.0
Grand Total	17,228.10	







PISHIN

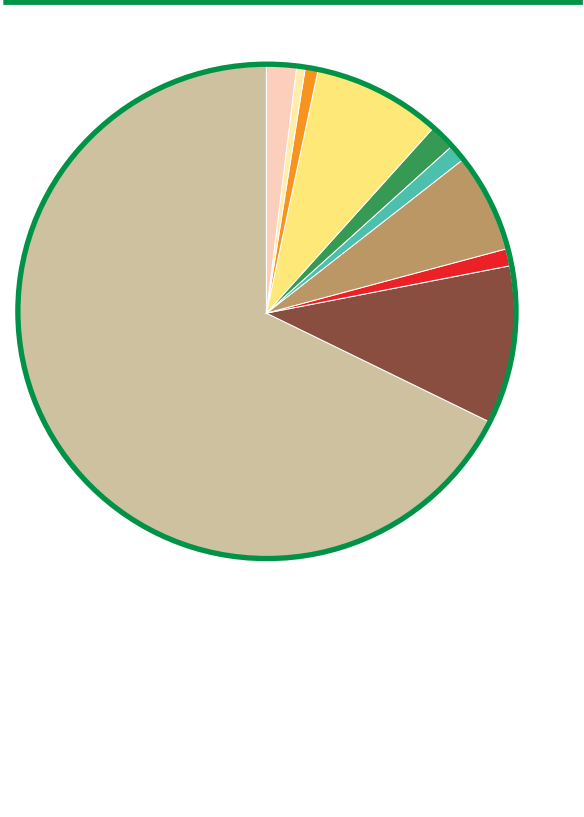
Pishin was notified as a separate district in 1975. It consists of four tehsils namely, Pishin, Barshore, Karezat and Huramzai. The district headquarter is located at Pishin. It is home to Pashtuns and Pashto is the widely spoken language. The summer is most delightful time of the year while winters can be bitterly cold. Some major crops and fruits produced in this district include wheat, barley, cumin, melons, tobacco, potato, onion, almond, apple, apricot, grapes, peach, plum, pomegranate, cherry and pistachio. Quetta-Pishin Valley, Mundigak and Shehr- e-Sokhta are famous historical sites. It has major deposits of limestone, marble, chromites, mica, granite, coal, quartz and iron ore.

INDEX MAP



Source: b-ari.gob.pk

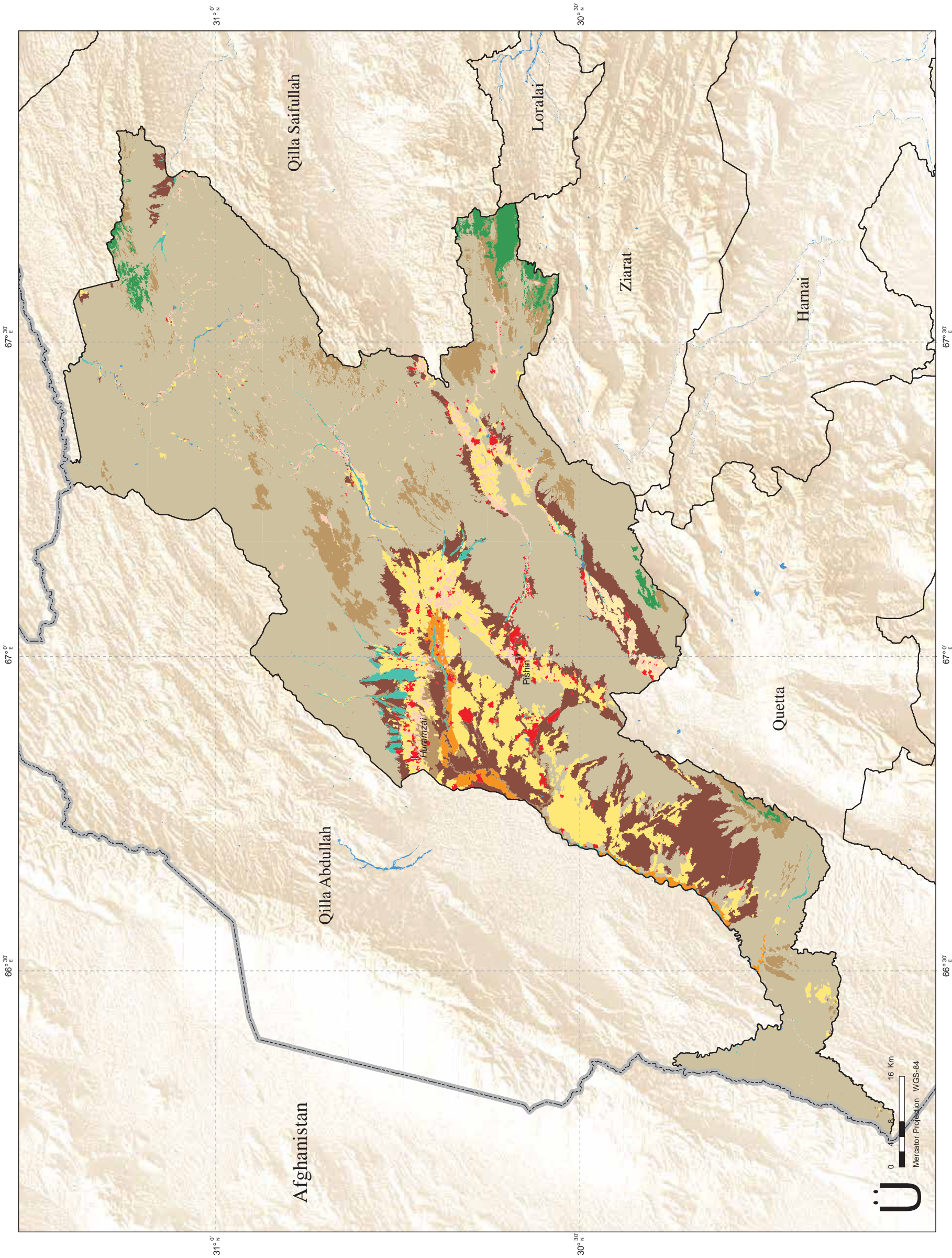
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	133.73	2.2
Crop Irrigated	31.56	0.5
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	56.69	0.9
Crop Rainfed	506.34	8.3
Forest - Natural Trees and Mangroves	101.09	1.7
Natural Vegetation in Wet Areas	61.11	1.0
Range Lands - Natural Shrubs and Herbs	382.73	6.3
Built-up	76.60	1.3
Bare Areas	626.76	10.3
Bare Areas with Sparse Natural Vegetation	4,127.25	67.5
Wet Areas	7.10	0.1
Snow and Glaciers	0.00	0.0
Grand Total	6,110.96	







## QILLA ABDULLAH

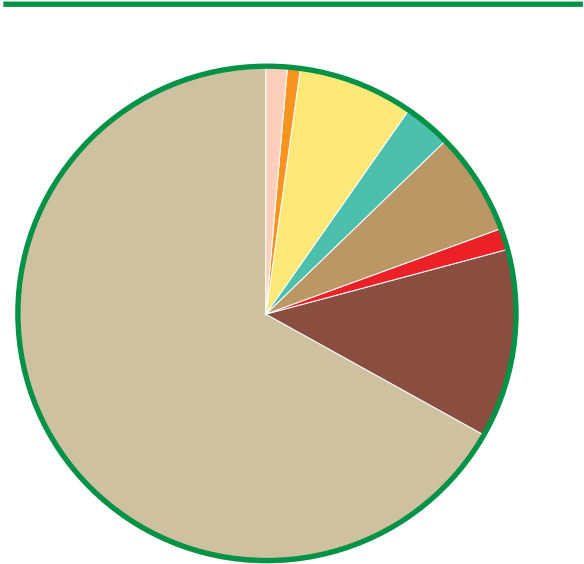
Qilla Abdullah was notified as a separate district in 1993. It consists of four tehsils namely, Chaman, Dobandi, Gulistan and Qilla Abdullah. The district headquarter is located at Chaman. It is home to people of Pashtun tribes like Kakar, Tareen, Syed and Achakzai. Pashto is the widely spoken language. The climate is dry. It mainly produces wheat, barley, cumin, melons, tobacco, potato, fodder and onion. Major fruits include apple, apricot, grapes, peach, plum and pomegranate. It has many historical sites such as Spin Ghundi Mound, Khawaja Armine shrine and Khojak Tunnel. It is famous for embroidery work and sheep wool sweaters. It has major deposits of antimony.

### INDEX MAP
















Source: [gettyimages.com](https://www.gettyimages.com)

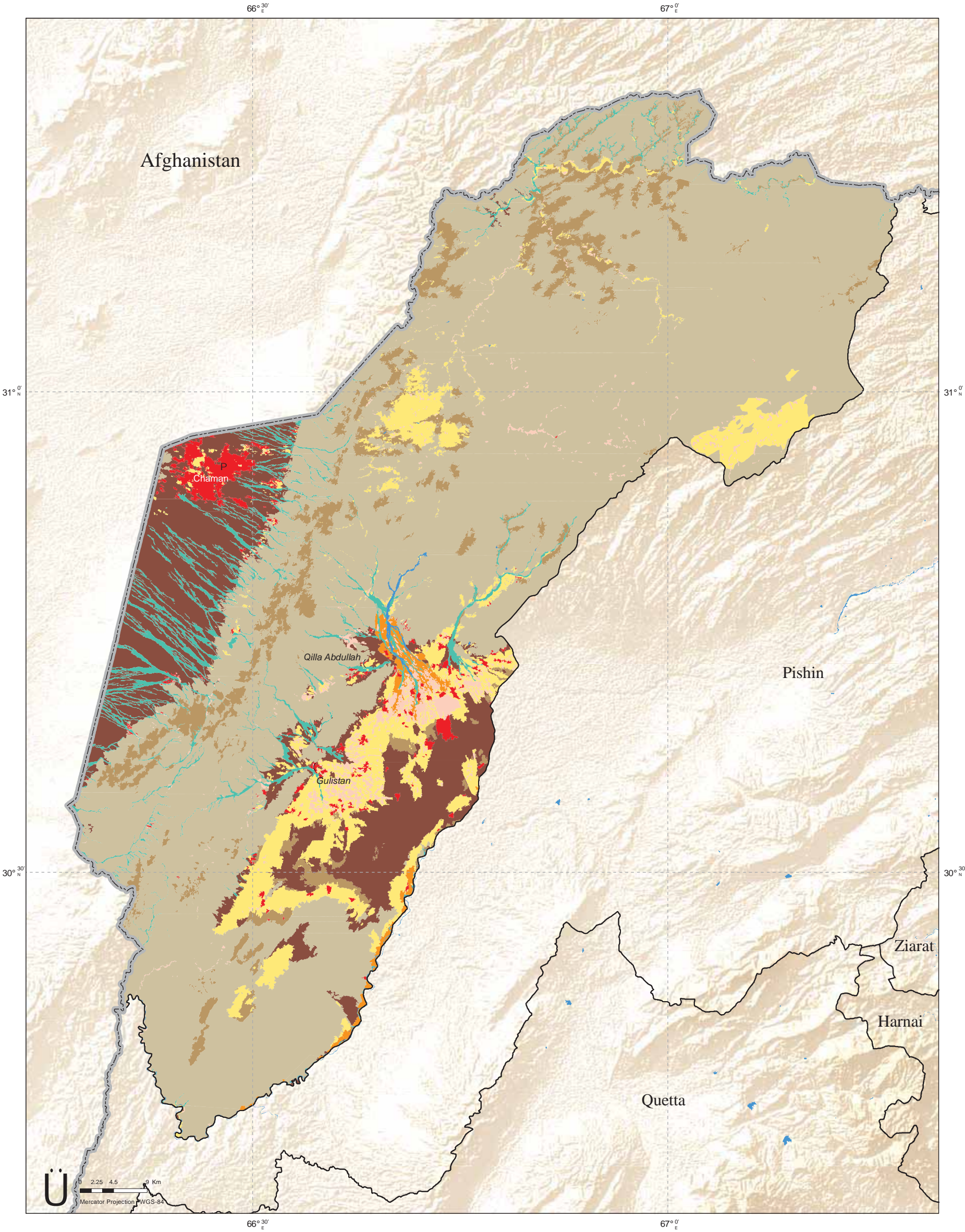
### LAND COVER IN PERCENTAGE



### DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
 Orchards	81.94	1.7
 Crop Irrigated	0.12	0.0
 Crop Marginal and Irrigated Saline	0.00	0.0
 Crop in Flood Plain	33.33	0.7
 Crop Rainfed	376.16	7.6
 Forest - Natural Trees and Mangroves	0.00	0.0
 Natural Vegetation in Wet Areas	147.25	3.0
 Range Lands - Natural Shrubs and Herbs	334.39	6.7
 Built-up	65.92	1.3
 Bare Areas	602.57	12.1
 Bare Areas with Sparse Natural Vegetation	3,314.46	66.8
 Wet Areas	5.97	0.1
 Snow and Glaciers	0.00	0.0
<b>Grand Total</b>	<b>4,962.10</b>	







# QILLA SAIFULLAH

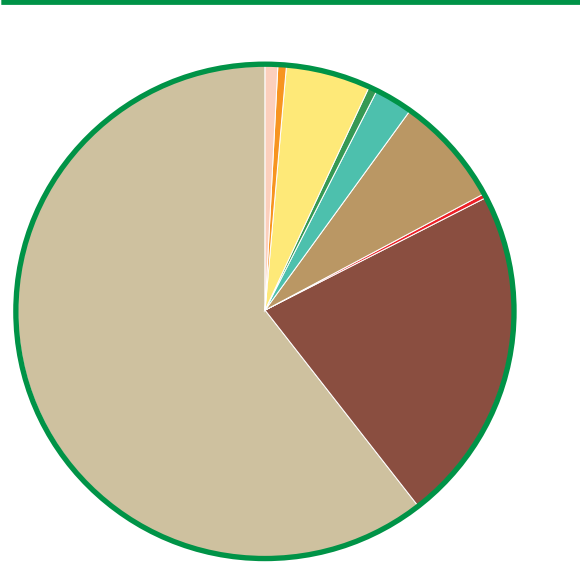
Qilla Saifullah, the ‘Fort of Saifullah’ is named after Saifullah Khan, the great grandson of Zarh Nikka, a renowned religious scholar of the region. It was notified as a separate district in 1988. It consists of two tehsils namely, Qilla Saifullah and Muslim Bagh. The district headquarter is located at Qilla Saifullah. It is home to Pashtuns. Pushto is the main spoken language. The climate is generally cold with frequent snowfall in winter. Major crops and fruits include wheat, barley, cumin, fodder, sunflower, maize, pulses, tobacco, cotton, vegetables, almond, apple, apricot, grapes, peach, pear, pomegranate and cherry. It has major deposits of limestone, magnesite, chromites, gabrro, iron and copper ore.

## INDEX MAP



Source: [www.panoramio.com](http://www.panoramio.com)

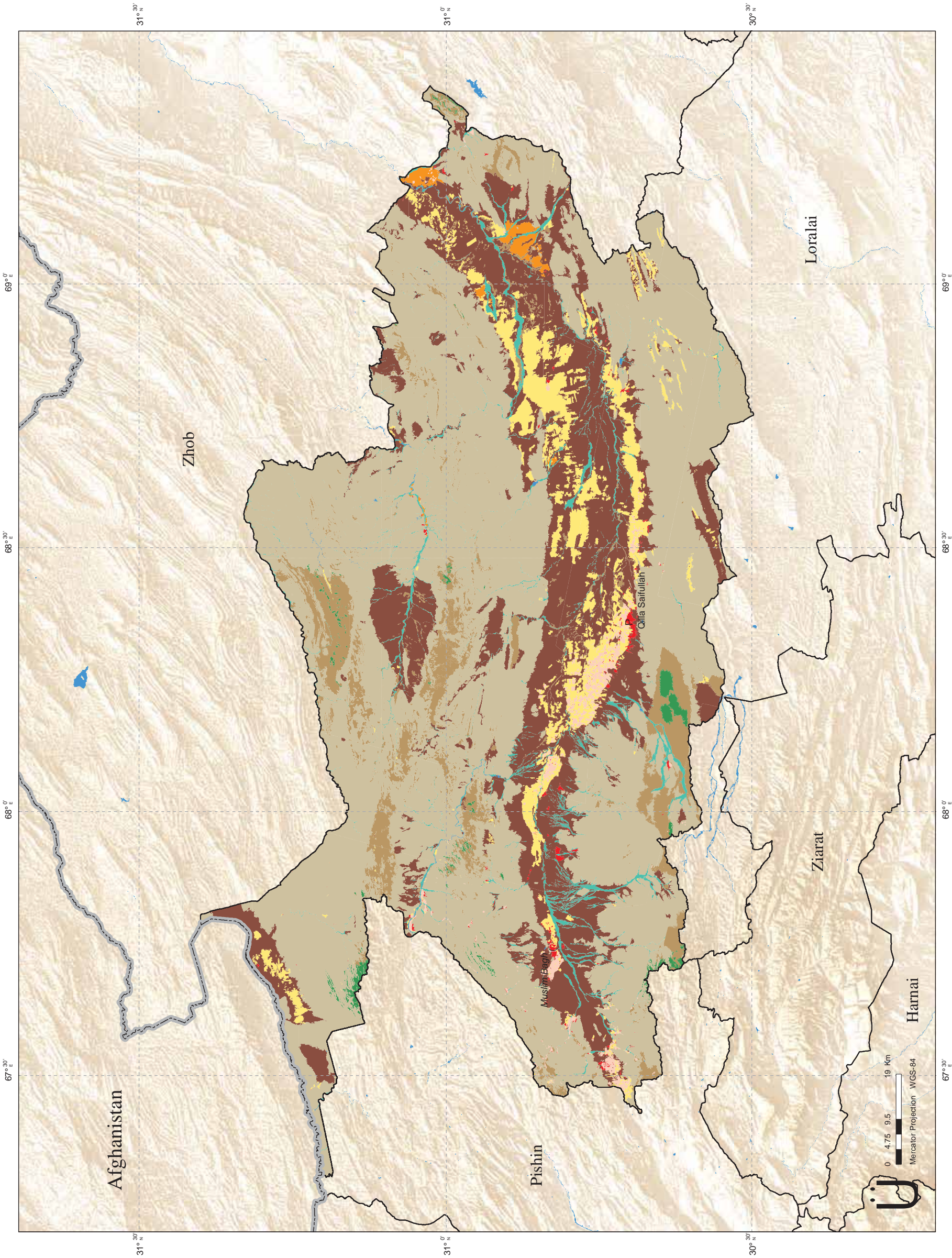
## LAND COVER IN PERCENTAGE



## DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	98.97	0.9
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	53.76	0.5
Crop Rainfed	604.39	5.7
Forest - Natural Trees and Mangroves	69.68	0.7
Natural Vegetation in Wet Areas	255.37	2.4
Range Lands - Natural Shrubs and Herbs	777.90	7.3
Built-up	34.68	0.3
Bare Areas	2,332.55	21.8
Bare Areas with Sparse Natural Vegetation	6,457.24	60.4
Wet Areas	5.57	0.1
Snow and Glaciers	0.00	0.0
Grand Total	10,690.10	







QUETTA

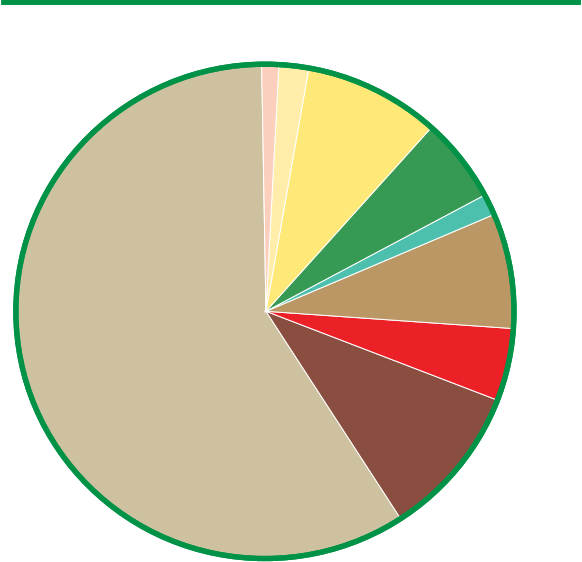
Quetta was notified as a separate district in 1975. It consists of two tehsils namely, Zarghoon, Chiltan and one sub-tehsil known as Panjpai. The district headquarter is located at Quetta which is also the capital of Balochistan province. It is home to people of Pashtun, Baloch, Brahui, Hazara and Punjabi ethnicities. The languages spoken here include Urdu, Pashto, Balochi, Brahui, Punjabi, Persian, Sindhi, Hindko and Siraiki. It has varying summer and winter temperatures and irregular rainfall. The district mainly produces wheat, barley, cumin, potato, onion, melon, apple, apricot, grapes, peach, plum, pomegranate, cherry and pear. It's famous historical sites include Quetta Miri fort and Mounds of Katir, Kuchlak, Tor Ghund and Tor Wasi. The famous Army Staff College is also located at Quetta.

INDEX MAP



Source: armystaffcollege.gov.pk

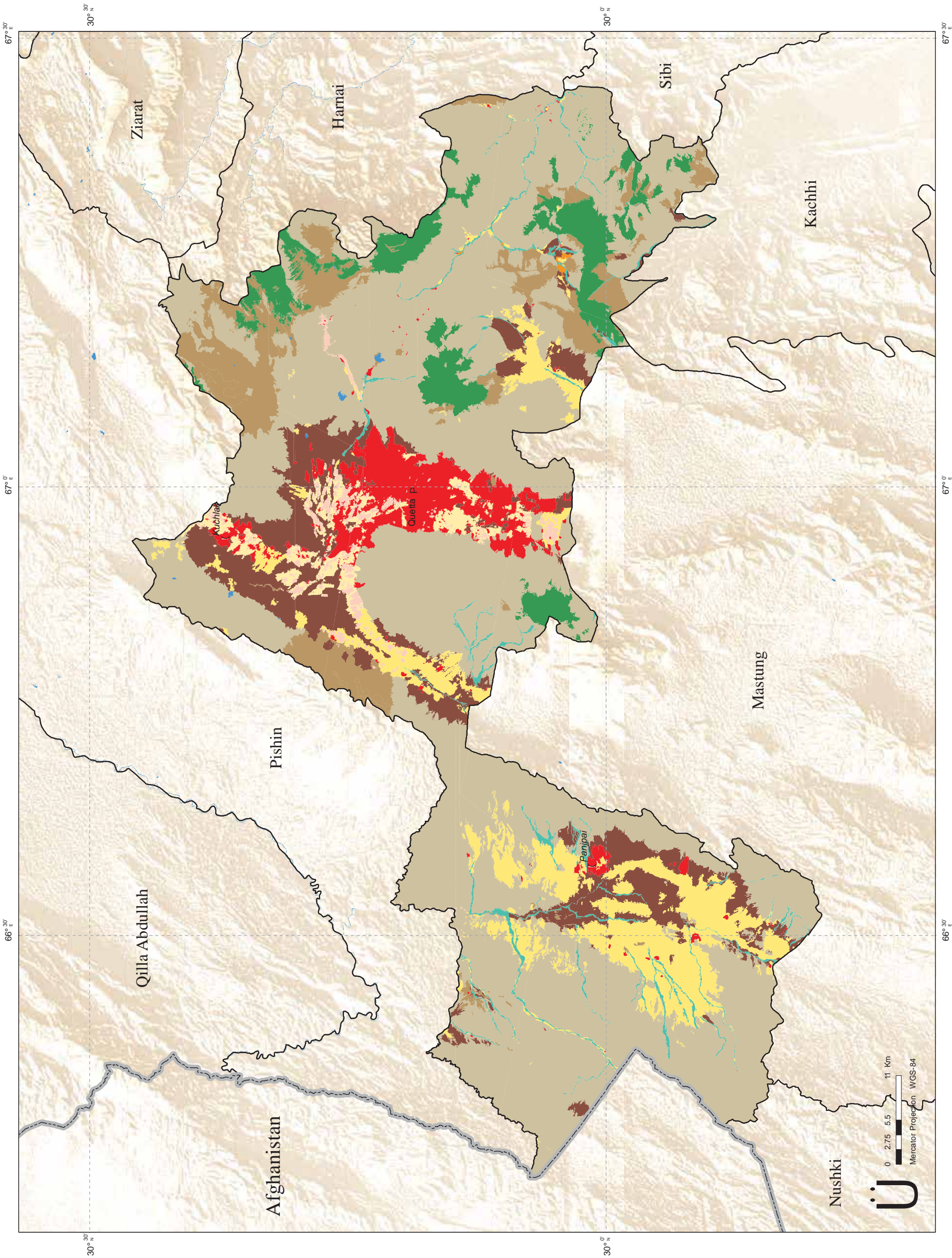
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	39.55	1.1
Crop Irrigated	62.11	1.7
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	1.91	0.1
Crop Rainfed	322.91	9.0
Forest - Natural Trees and Mangroves	197.32	5.5
Natural Vegetation in Wet Areas	53.39	1.5
Range Lands - Natural Shrubs and Herbs	267.75	7.5
Built-up	165.70	4.6
Bare Areas	353.71	9.9
Bare Areas with Sparse Natural Vegetation	2,105.53	59.0
Wet Areas	1.61	0.0
Snow and Glaciers	0.00	0.0
Grand Total	3,571.48	







# SHERANI

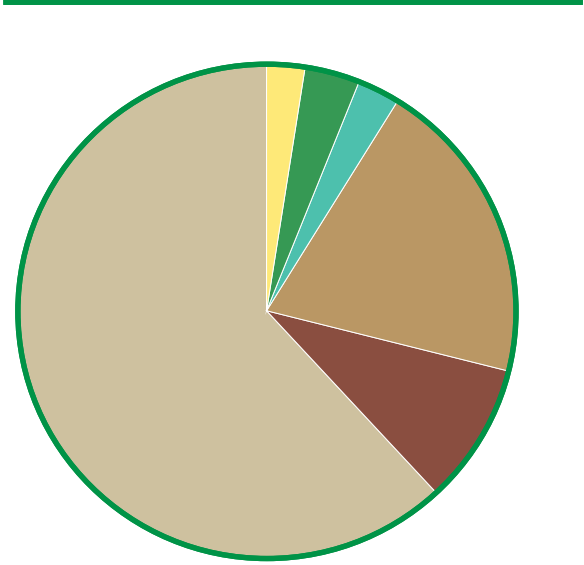
Sherani was notified as a separate district in 2003, earlier it was part of Zhob district. It consists of one tehsil with the district headquarter at Zhob. It is home to Oba Khel, Choharkhail and Harifal tribes. Pashto and Urdu are the spoken languages of this region. The district lies within Sulaiman mountain range and its highest point is ‘Takht-e-Sulaiman’. The climate is generally cold with snowfall in winter at hilly areas and more rainfall in summer. The principal trees found here are salt cedar, pistachios, juniper, pine nut, wild ash, wild almond and wild olive.

## INDEX MAP



Source: [www.panoramio.com](http://www.panoramio.com)

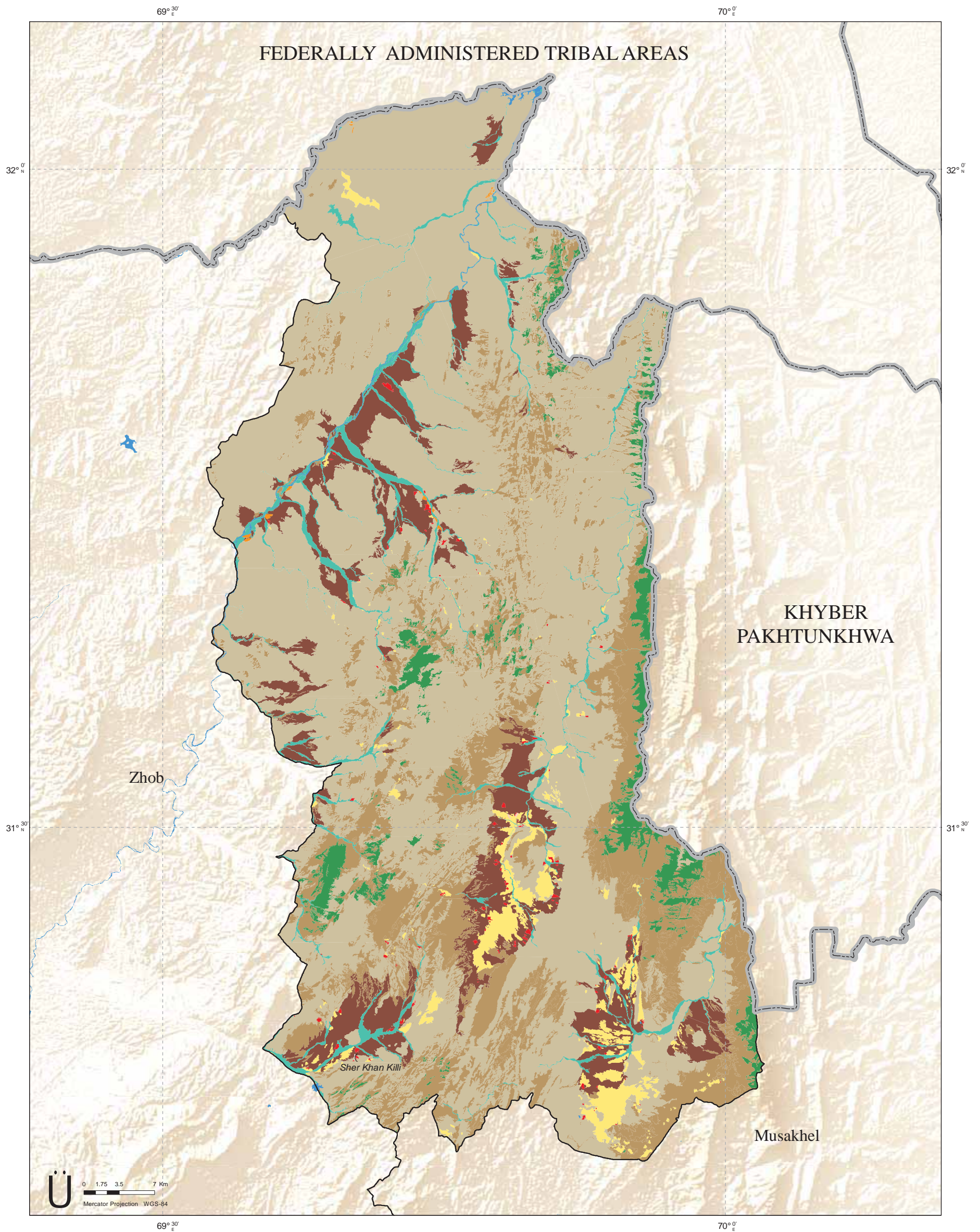
## LAND COVER IN PERCENTAGE



## DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.11	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.05	0.0
Crop in Flood Plain	1.33	0.0
Crop Rainfed	70.36	2.6
Forest - Natural Trees and Mangroves	97.29	3.6
Natural Vegetation in Wet Areas	79.89	2.9
Range Lands - Natural Shrubs and Herbs	544.53	19.9
Built-up	5.40	0.2
Bare Areas	247.80	9.1
Bare Areas with Sparse Natural Vegetation	1,679.21	61.5
Wet Areas	6.40	0.2
Snow and Glaciers	0.00	0.0
Grand Total	2,732.35	







SIBI

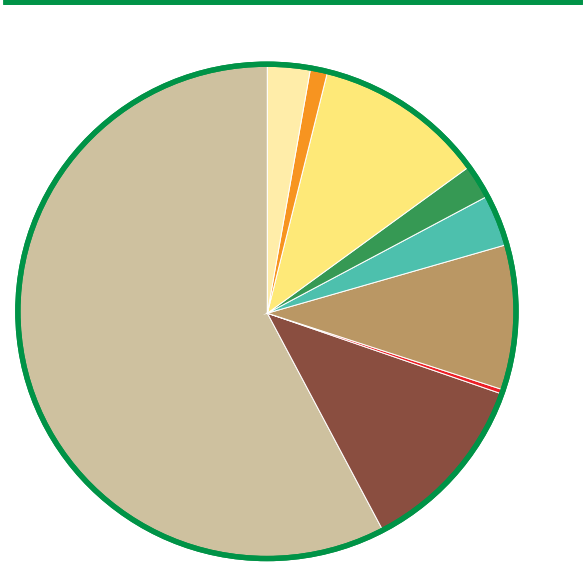
Sibi was established in 1903. It derives its name from Siwi, a Hindu Lady of Sewa race who is said to have ruled this place. It consists of four tehsils namely, Sibi, Kutmandi, Sangan and Lehri. The district headquarter is located at Sibi. It is home to Baloch, Jamoot and Pashtun ethnicities. The district is one of the hottest areas of the sub-continent and is often referred as the ‘Hot Spot’ of Pakistan. It mainly produces wheat, barley, mustard, apricot, citrus, plum, pomegranate, dates and pear. It has major deposits of coal, marble, gypsum and limestone. The district is also famous for a week-long Sibi Festival to celebrate spring with tournaments, exhibitions and trading.

INDEX MAP



Source: suchtv.pk

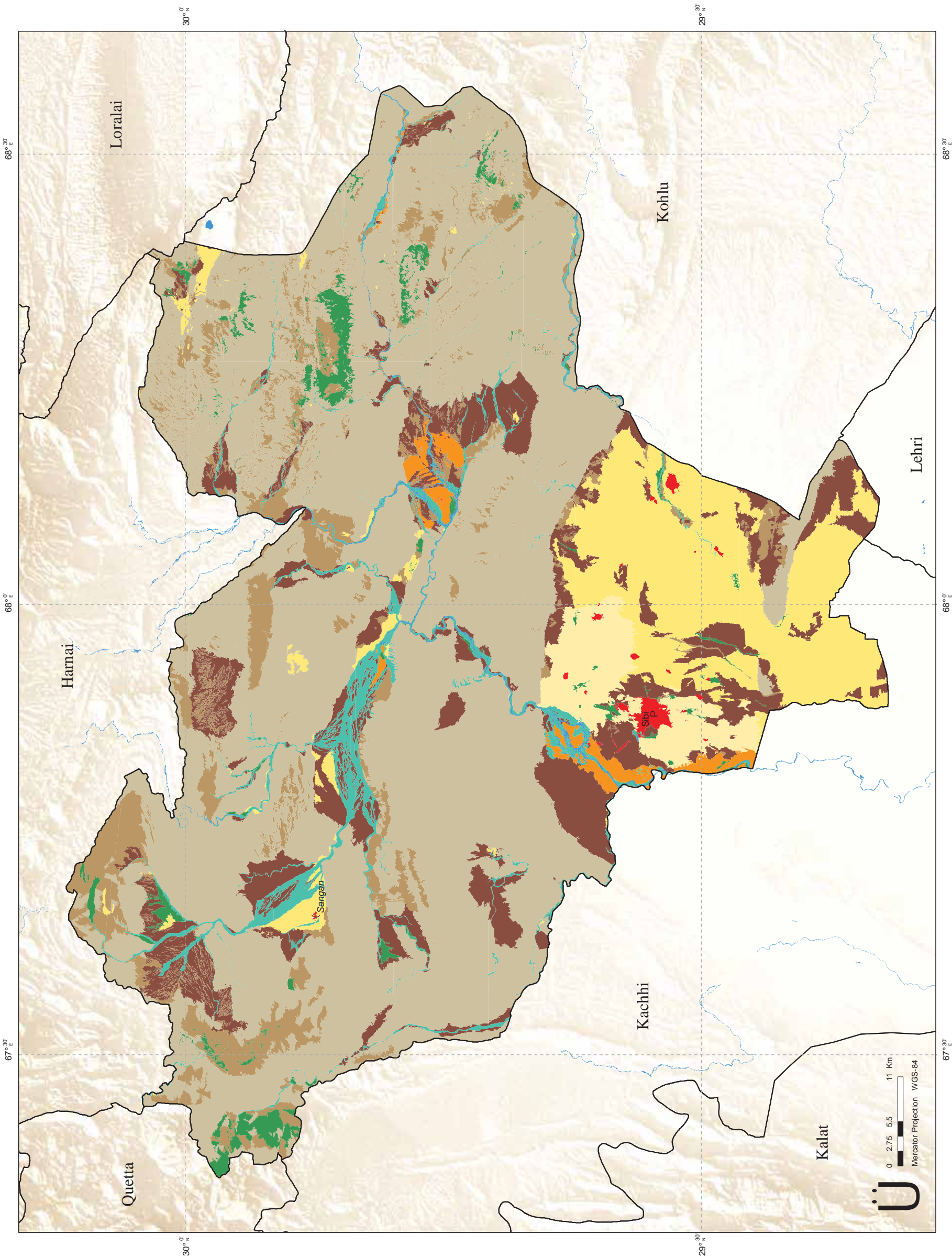
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.00	0.0
Crop Irrigated	154.90	2.9
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	63.30	1.2
Crop Rainfed	590.22	11.1
Forest - Natural Trees and Mangroves	114.19	2.1
Natural Vegetation in Wet Areas	175.43	3.3
Range Lands - Natural Shrubs and Herbs	510.75	9.6
Built-up	18.42	0.3
Bare Areas	631.04	11.9
Bare Areas with Sparse Natural Vegetation	3,050.43	57.3
Wet Areas	12.92	0.2
Snow and Glaciers	0.00	0.0
Grand Total	5,321.61	







SOHBATPUR

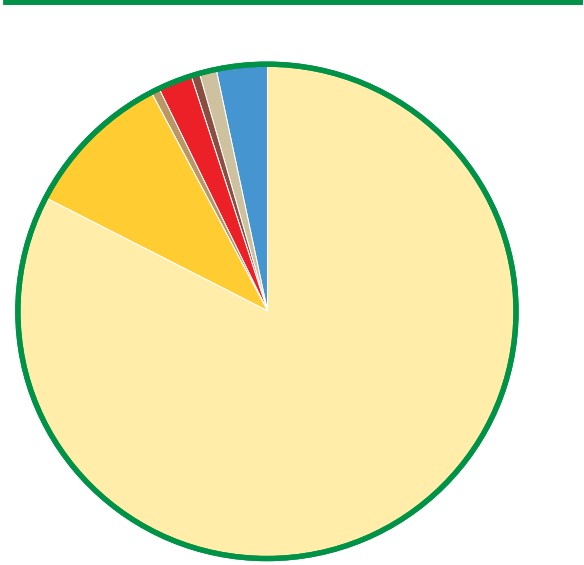
Sohbatpur was created in 2013 from tehsil of Jafarabad district. It shares border with Nasirabad, Jafarabad and Dera Bugti in Balochistan, and Jacobabad and Kashomre in Sindh. It consists of four tehsils namely, Manjipur, Hayrvi, Faridabad and Sohbatpur. The district headquarter is located at Sohbatpur.. Weather becomes hot and humid in summer and pleasant in winter. Some of the major crops and fruits include wheat, barley, rice, millet, maize, vegetables, dates, mango, citrus and guava. It is famous for its embroidery and needle work handicrafts.

INDEX MAP



Source:www.panoramio.com

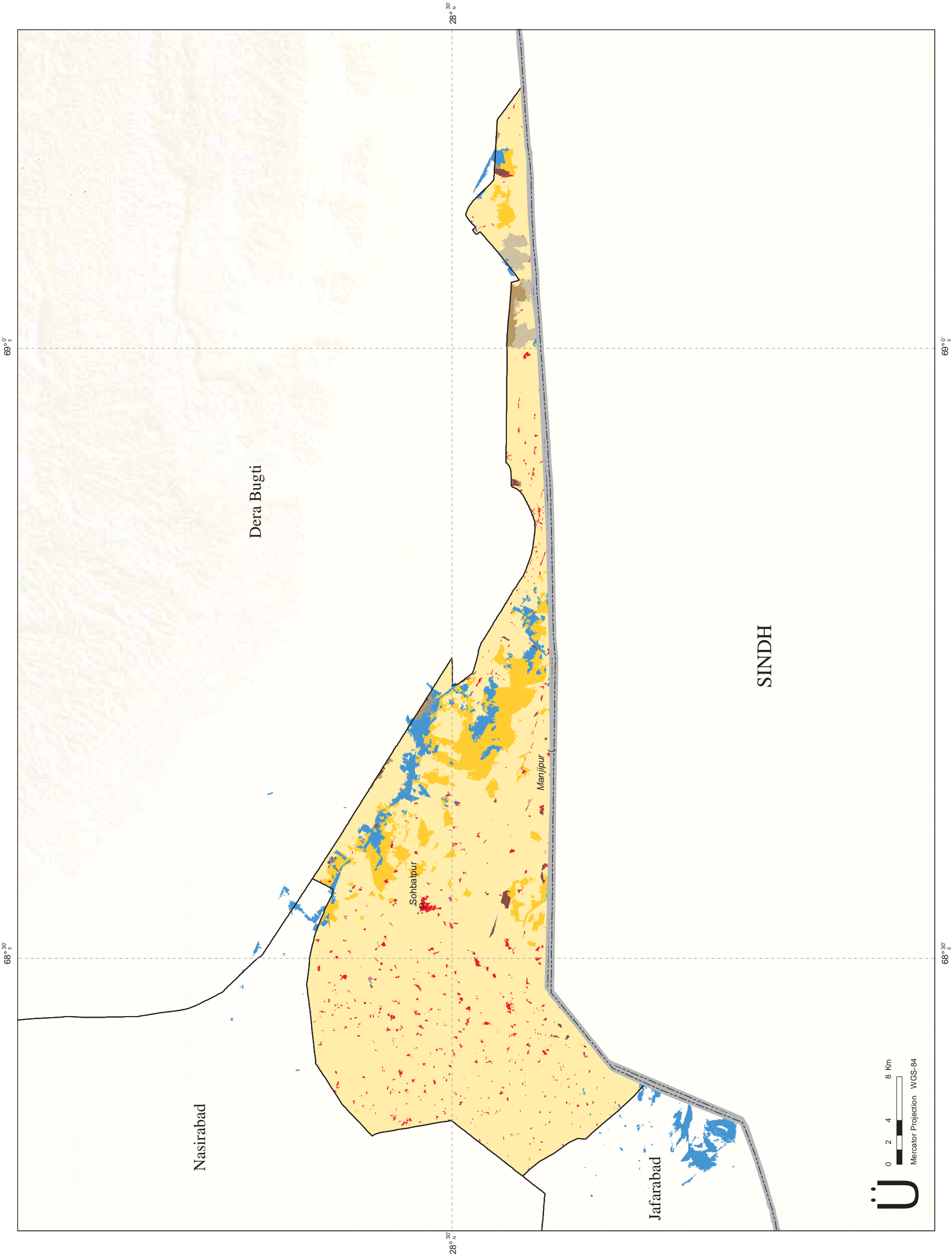
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.05	0.0
Crop Irrigated	671.20	82.5
Crop Marginal and Irrigated Saline	79.03	9.7
Crop in Flood Plain	0.00	0.0
Crop Rainfed	0.07	0.0
Forest - Natural Trees and Mangroves	0.06	0.0
Natural Vegetation in Wet Areas	0.33	0.0
Range Lands - Natural Shrubs and Herbs	5.85	0.7
Built-up	17.35	2.1
Bare Areas	4.79	0.6
Bare Areas with Sparse Natural Vegetation	8.51	1.0
Wet Areas	26.63	3.3
Snow and Glaciers	0.00	0.0
Grand Total	813,87	







WASHUK

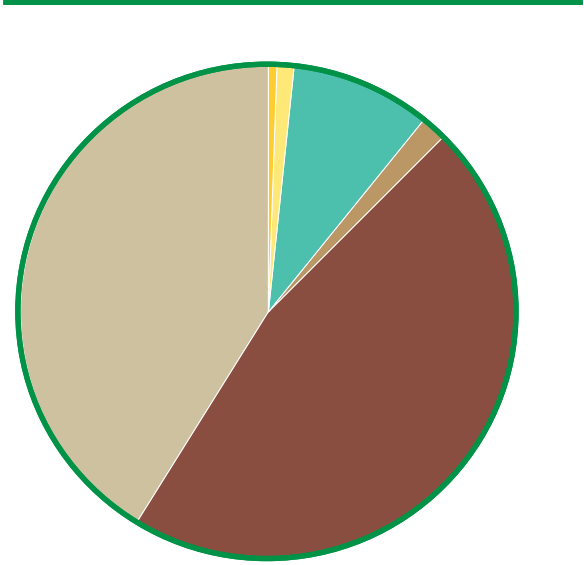
Washuk was notified as a district in 2000. The district has three tehsils, Washuk, Basima and Mashkel with the district headquarter located at Washuk. Baloch are the major residents of this district. The main spoken languages include Balochi, Brahvi and Urdu. The climate is mainly dry with very hot summer. Dust storms are common throughout the year. Some major crops and fruits include wheat, barley, mustard, cumin, lentil, fodder, sunflower, sorghum, millet, maize, pulses, vegetables, almond, apple, apricot, grapes, pear, pomegranate, dates and chickoo. It has major deposits of chromites, copper, antimony and manganese.

INDEX MAP



Source: SM Rafiq

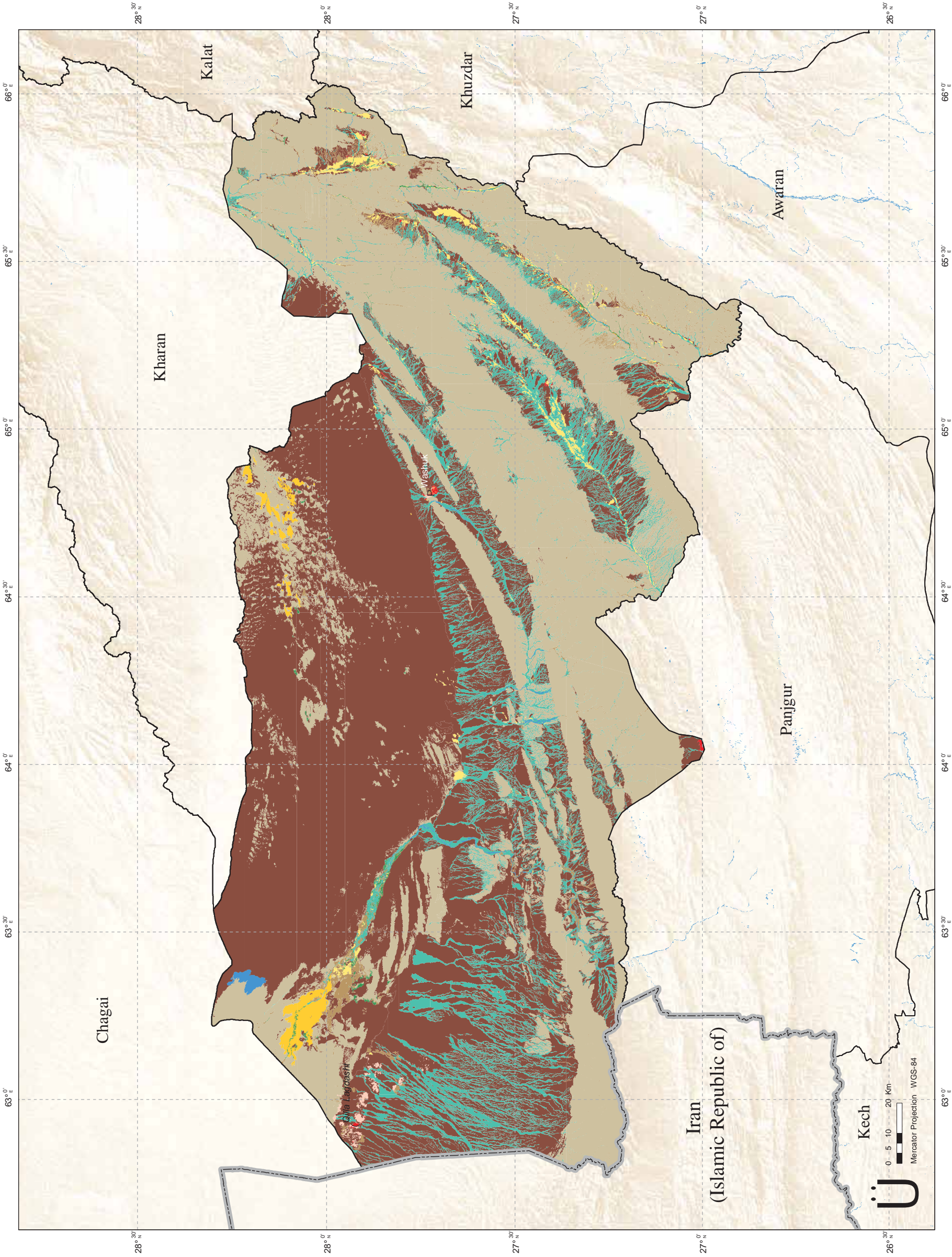
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	43.67	0.1
Crop Irrigated	0.28	0.0
Crop Marginal and Irrigated Saline	240.33	0.7
Crop in Flood Plain	5.09	0.0
Crop Rainfed	341.40	1.0
Forest - Natural Trees and Mangroves	59.34	0.2
Natural Vegetation in Wet Areas	3,091.18	9.3
Range Lands - Natural Shrubs and Herbs	536.23	1.6
Built-up	21.90	0.1
Bare Areas	15,344.78	45.9
Bare Areas with Sparse Natural Vegetation	13,676.26	40.9
Wet Areas	54.88	0.2
Snow and Glaciers	0.00	0.0
Grand Total	33,415.33	







ZHOB

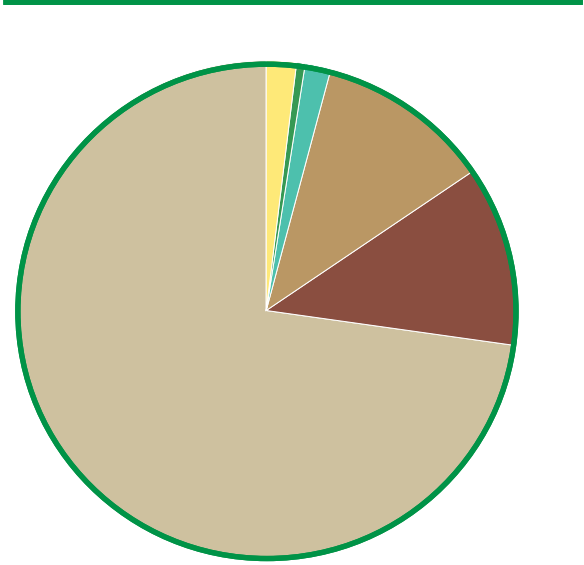
Zhob has the status of district since 1890. It consists of four tehsils namely, Ashwat, Qamar Din Karez, Sambaza and Zhob. The district headquarter is located at Zhob. It is home to tribes of Mandokhels, Haripals, Babars, Lawoons, Sulaimankhels, Nasars, Kharots, Afghans and Syeds. Pashto and Saraiki are the widely spoken languages. The climate is generally cold with heavy rainfall during summer. Zhob river is used for irrigation. Some major crops and fruits include wheat, barley, mustard, sorghum, maize, mung, mash beans, tobacco, vegetables, apple, apricot, plum, pomegranate and pear. It has major deposits of coal, chromites and granite. It is famous for its embroidery work.

INDEX MAP



Source: flickr.com

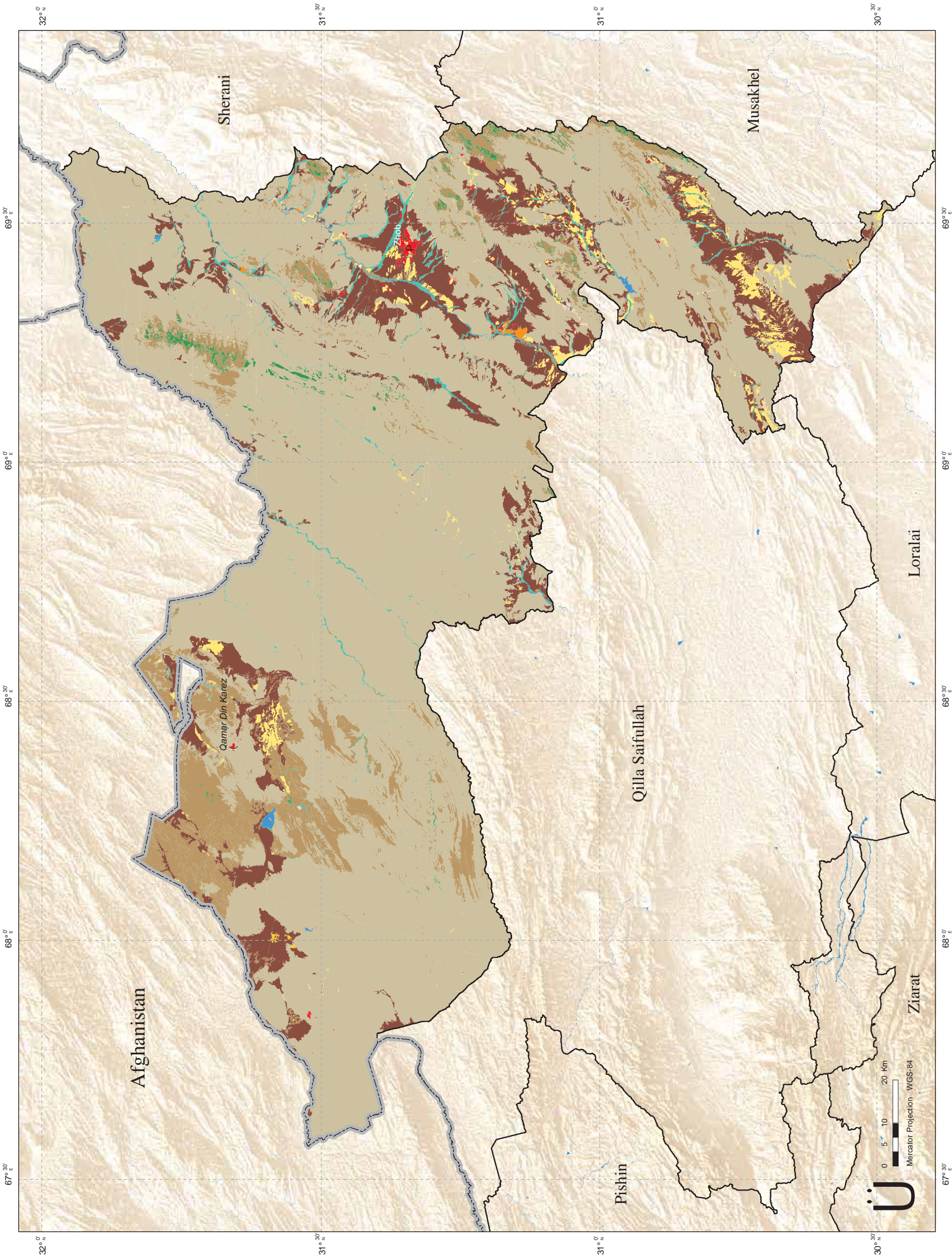
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	9.39	0.1
Crop Irrigated	1.72	0.0
Crop Marginal and Irrigated Saline	3.20	0.0
Crop in Flood Plain	12.83	0.1
Crop Rainfed	277.72	2.0
Forest - Natural Trees and Mangroves	89.97	0.6
Natural Vegetation in Wet Areas	241.87	1.7
Range Lands - Natural Shrubs and Herbs	1,549.98	11.1
Built-up	29.73	0.2
Bare Areas	1,643.66	11.8
Bare Areas with Sparse Natural Vegetation	10,033.50	72.1
Wet Areas	20.90	0.2
Snow and Glaciers	0.00	0.0
Grand Total	13,914.47	







ZIARAT

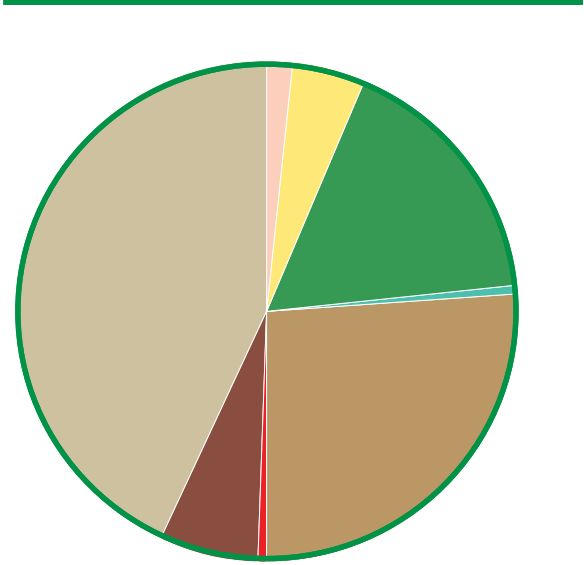
Ziarat was notified as a separate district in 1986. The district has two tehsils namely, Ziarat and Sinjavi. The founder of Pakistan, Quaid-e-Azam Mohammad Ali Jinnah spent his last days in Ziarat Residency situated in the district headquarter, Ziarat. Pashto is the main spoken language. The climate is refreshingly cool in summer with most rainfall. In winter, the temperature often falls below zero degree Celsius. The district mainly produces wheat, barley, mustard, sorghum, millet, maize, mung and mash pulses. Major fruits include apricot, almond, peach, grapes, apple and cherry. Ziarat has some of the oldest Juniper forests in the world. It has major deposits of coal, marble, titanium and calcite.

INDEX MAP



Source: samiphotography.com

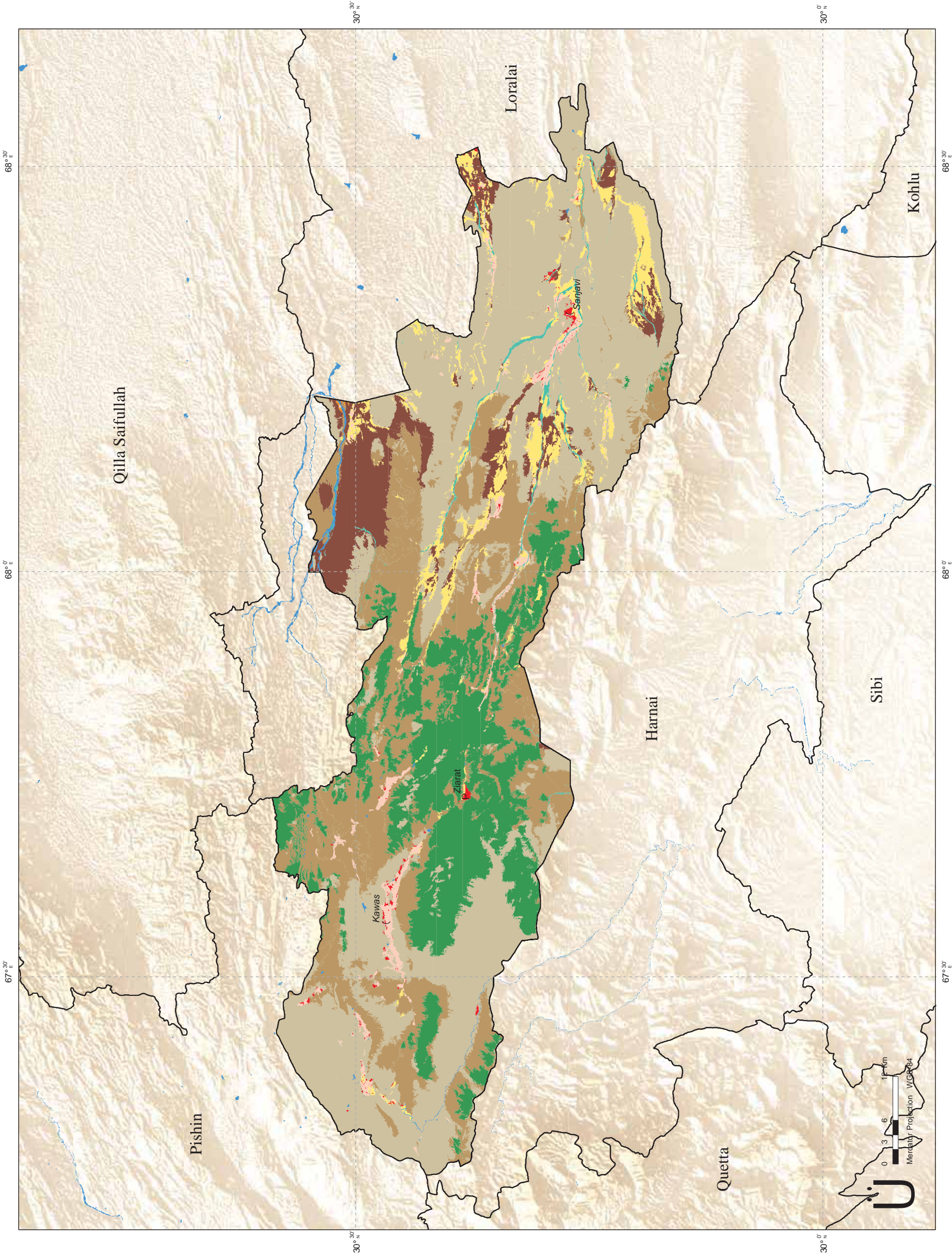
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	53.29	1.7
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.49	0.0
Crop Rainfed	149.79	4.8
Forest - Natural Trees and Mangroves	523.86	16.8
Natural Vegetation in Wet Areas	25.84	0.8
Range Lands - Natural Shrubs and Herbs	813.04	26.0
Built-up	11.02	0.4
Bare Areas	206.80	6.6
Bare Areas with Sparse Natural Vegetation	1,335.60	42.7
Wet Areas	5.77	0.2
Snow and Glaciers	0.00	0.0
Grand Total	3,125.51	











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The Government of Pakistan, with support from its cooperating partners, has initiated a comprehensive program to address the improvement in agricultural statistical reporting utilizing auxiliary data from Earth Observation satellites.

The project “Agricultural Information System - Building Provincial Capacity in Pakistan for Crop Estimation, Forecasting and Reporting based on the integral use of Remotely Sensed Data” focuses on enhancing and improving current systems based on the integral use of remotely sensed data into the existing data collection, analysis and dissemination systems; as well as the development of complementary systems to validate the use of satellite remotely-sensed data for area estimation and yield forecasting.

The land cover mapping was considered as a critical component of the area frame development and evolution. Many agricultural applications require detailed, updated, reliable and accurate baseline on land cover to support spatial monitoring and to evaluate ecosystem and landscape dynamics. Particularly in agriculture a reliable land cover model of the present status of land utilization can significantly assist the development and support statistical applications.

FAO with the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) and the Crop Reporting Services (CRS), has successfully supported the development of a harmonized land cover database. The land cover atlases of Balochistan, Punjab, Sindh, Khyber Pakhtunkhwa provinces & Federally Administered Tribal Areas have been developed and the series will be continued to provide a complete coverage of the country.

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