



# LAND COVER ATLAS OF PAKISTAN

## *The Punjab Province*

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









The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned. The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO.

The designations employed and the presentation of material in the map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

The word “countries” appearing in the text refers to countries, territories and areas without distinction.

Project code: PAK/USA/125/USA

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged.

Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders.

Applications for such permission should be addressed to:

John S. Latham  
Senior Land and Water Officer (Geospatial)  
NRL - UN/FAO

FAO  
Viale delle Terme di Caracalla, 00153 Rome, Italy  
or by e-mail to:  
[copyright@fao.org](mailto:copyright@fao.org)  
© FAO 2014



## FOREWORD

---

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 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.

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 and land cover atlas of each of the two provinces of Punjab and Sindh and the series will be continued to provide a complete coverage of the country.

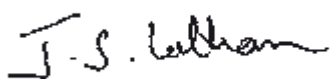
The Area Frame development provides a statistical robust, cost-effective tool to monitor agriculture in the country at Federal and provincial level. FAO with the project partners, the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) and the Crop Reporting Services (CRS), have successfully 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 critical key steps:

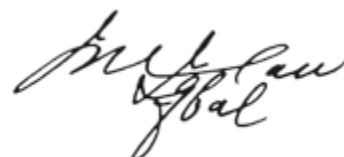
- STRATIFICATION: The land is divided into homogeneous entities or strata using the updated land cover database, generated using the FAO Land Cover Classification System (LCCS).
- MULTI-STACK/PHASE SAMPLING: Within each stratum, the land is further divided into sampling units or segments and a sample 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) are taken. 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 Punjab 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

---

The publication of the *Land Cover Atlas of Pakistan - The Punjab 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 Punjab 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/125/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 SUPARCO, Directorate Crop Reporting Service Punjab, 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 changes 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 Punjab land cover; and
- 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 led by Imran Iqbal comprises Syed Zuhair Bokhari, Abdul Ghafoor, Arshad Ali, Muhammad Farooq, Riffat Shamshad, Aamir Imran, Kamran Lodhi, Muhammad Nouman Khan, Ghulam Abbas and Haris Mazhar. The Pakistan FAO representative, Kevin Gallagher and subsequently Patrick Evans, the FAO office in Pakistan supported the implementation of the on-site training workshops for land cover mapping project. The FAO HQs team was led by John Latham, with support of Renato Cumani, Ugo Leonardi, Antonio Di Gregorio, Ilaria Rosati, Emmanula 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 Ane Louise Gaudert (Graphic Design) and Mario Bloise (Database).

The effort of the photo-interpreters group and of the fieldwork team from SUPARCO and CRS that undertook field validation activities 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

---

This *Land Cover Atlas of Pakistan - The Punjab 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 Punjab and Sindh provinces, as well as SUPARCO staff attended the training, from the 12th to the 23rd February 2012, at the SUPARCO Islamabad office, by FAO to appraise all the stakeholders of the significant benefit of the LCCS approach and 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 36 classes, which have been mapped based on the analysis, interpretation and validation of SPOT -5 very high resolution satellite data (5 metre). 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 agricultural statistics and agricultural monitoring other thematic beneficiary areas are expected to 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 Punjab, 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 and for the province as a whole.



## 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 and Sindh provinces 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.

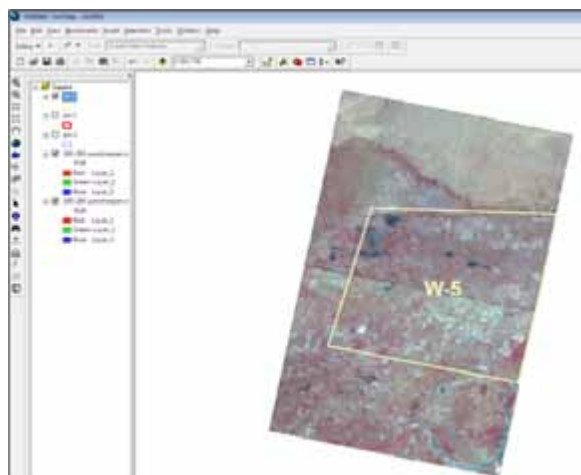


Figure 1: Sub-setting of image according to the extent of working area

## 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 significantly enhanced the usefulness of this technology for land cover mapping and its subsequent utilization.

The methodology for the production of maps is based on a detailed methodology including:

### 1. Image Acquisition and Pre-Processing

SPOT-5 imagery was utilized to map the land cover of Pakistan. The imagery was analyzed with respect to cloud cover percentage and image quality. Initially it was decided that images from 2011 would be used but owing to flood damages, it was considered appropriate to use pre-monsoon imagery of 2010 to map the land cover of Punjab province.

All images were geometrically corrected to a UTM projection following which ortho-rectification was performed. The images were then subdivided into desired area of interest and re-projected to Mercator projection. Subsequently, the images were pan-sharpened to 5 m spatial resolution for land cover mapping.

### 2. Image Processing and Interpretation

#### 2.1 Segmentation

Segmentation is the process of grouping pixels to simplify the image into meaningful pixel groups (*i.e.* segments or objects). Image segmentation provides a 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 colour, intensity or texture. For land cover mapping, segmentation helps in developing cluster pixels that belong to same land cover class.

For the purpose of the Land Cover Atlas development, segmentation was performed using Definiens Software. A multi-resolution segmentation approach was implemented to perform the segmentation at the scale ranged between 35 to 55 m depending on the complexity of 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 the labeling of the image object using land cover legends, and ancillary information. The FAO tool - 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 scenes was carried out at 1:25,000 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 while keeping a copy of the full resolution interpretation.

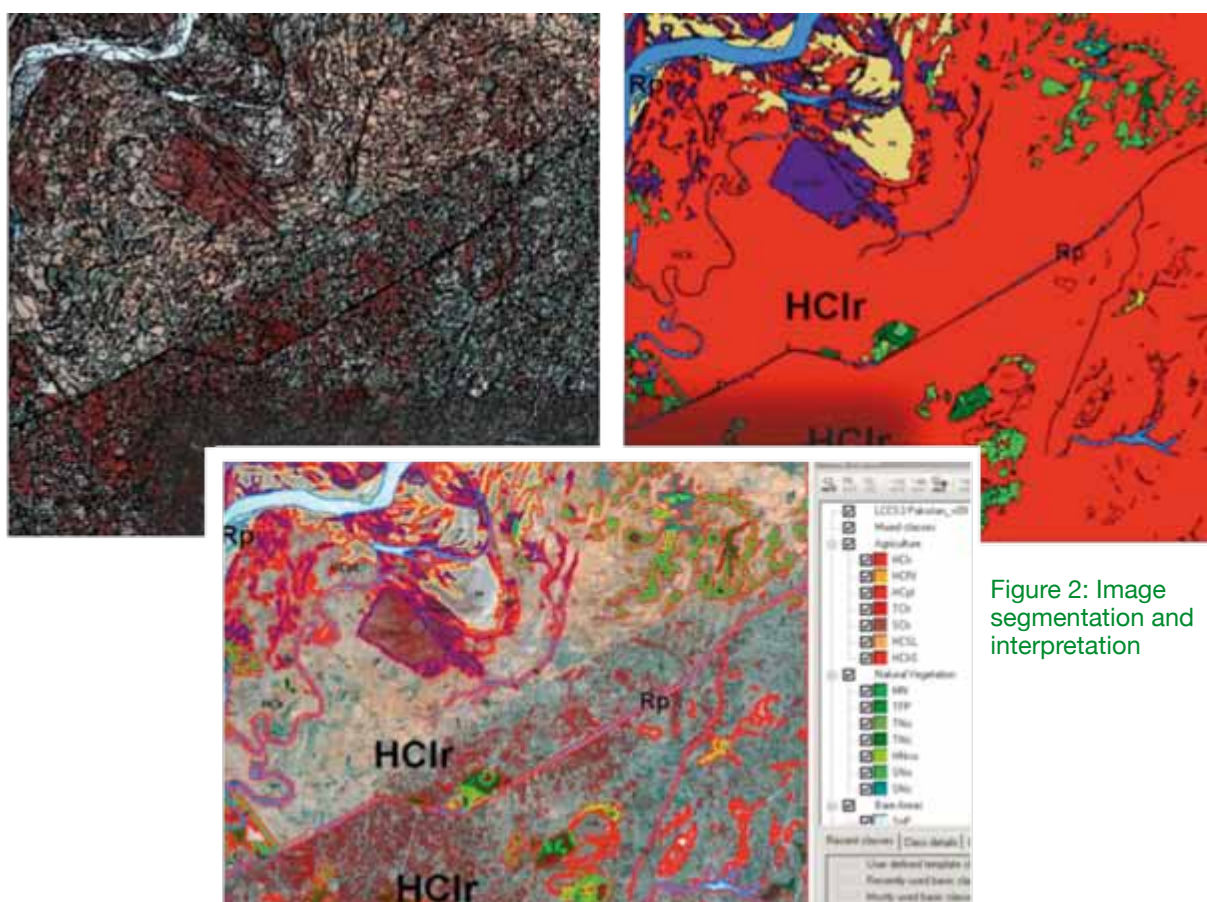


Figure 2: Image segmentation and interpretation



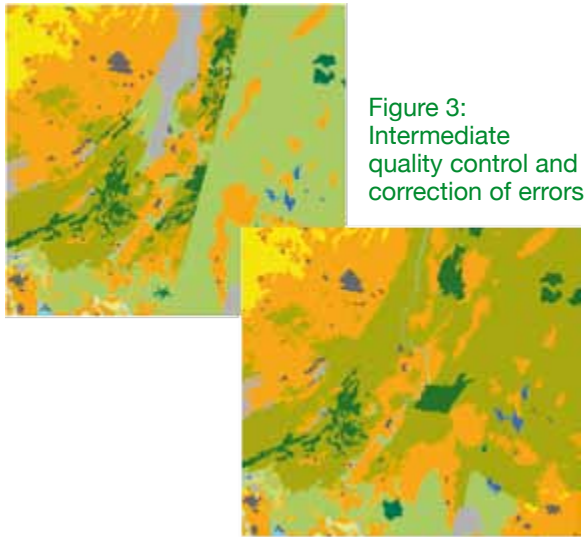


Figure 3:  
Intermediate  
quality control and  
correction of errors

### 2.3 Intermediate Supervision Process - Quality Control

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

After the errors were removed by the photo-interpreter, the corrected interpretation was again submitted to a Quality Control supervisor for quality check. The process was repeated in case errors still existed.

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

### 2.4 Field validation

On completion of the interpretation phase, field surveys were 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 types and the coordinates were recorded using GPS systems.

### 2.5 Evaluation

After the completion of the interpretation, a quality check and final edge matching was undertaken and final products were submitted to FAO, HQs for a 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 differences from the subjectivity of different interpreters.

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

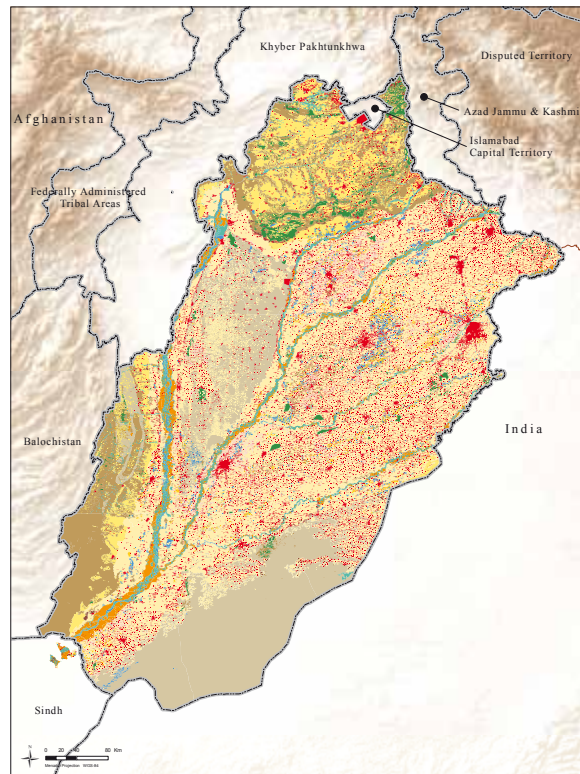


Figure 4: Field validation of Punjab province

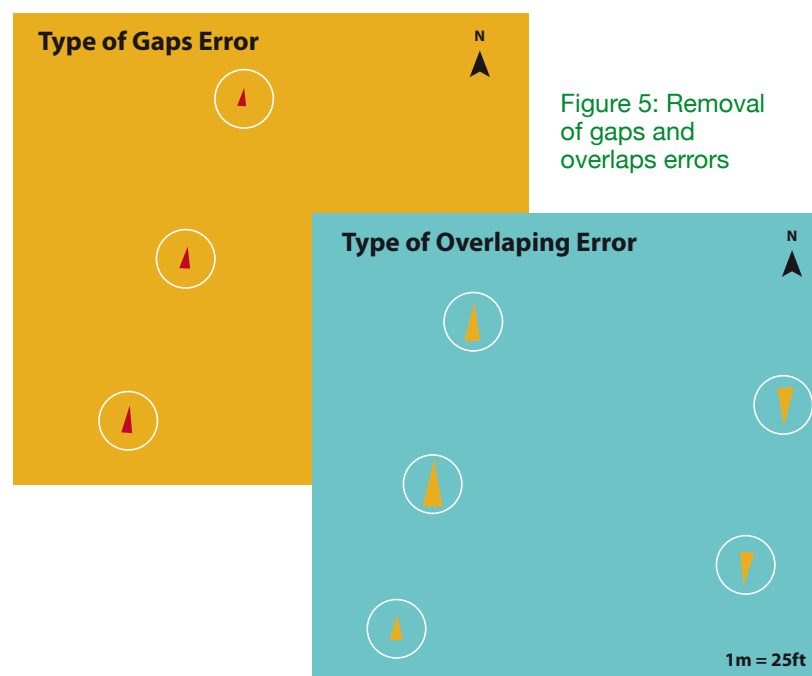


Figure 5: Removal  
of gaps and  
overlaps errors



## LEGEND

The legend for land cover mapping was created by FAO in consultation with SUPARCO and representatives of the Crop Reporting Services. The Photo-keys of different land cover types were developed and which serve to illustrate the aspect 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 36 land cover classes aggregated into 13 main classes. The main 13 classes 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 always 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 corn, soybeans, vegetables, tobacco, and cotton. This class also includes all land being actively tilled. The differentiation of this class with rain fed crops is made on the basis of presence of channels, geographic location and local knowledge. Herbaceous crop irrigated and Herbaceous crop surrounded by Tree orchards are included in crop 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 crops 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's 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 flood plain 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 the absence of channels, geographic location 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 greater than 6 meters tall. 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 a type of vegetation with tree percentage cover of more than 60%. The class closed trees occur in different parts of the country. It has woody natural vegetation, found both in broad as well as in needle leaves. Open trees are the type of vegetation with mandatory presence of trees and herbaceous growth forms with percentage cover varying from 10 to 60%.

Mangroves are forest type exclusively found in the coastal areas.

### 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 subclasses are derived on the bases of soil and vegetation type. River bank is part of the river bed flooded during the rainy season (flood plain), the bed of the seasonal rivers is also 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 are found along the rivers and associated flooded areas 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 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 %. They are found mainly on the hills of Pakistan, with both varieties of broad and 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 of up to 10% of cover.

## 9. Built-up Area

It defines all built-up areas (urban, industrial, airport etc.) with all vegetated areas linked to the built-ups 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 and barren land. 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 this class. These are 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. This class is 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 above surface. Mud flats are area with wet sand in proximity of mangroves forest and coastal area. River perennial is a part of the riverbed where there is a constant presence

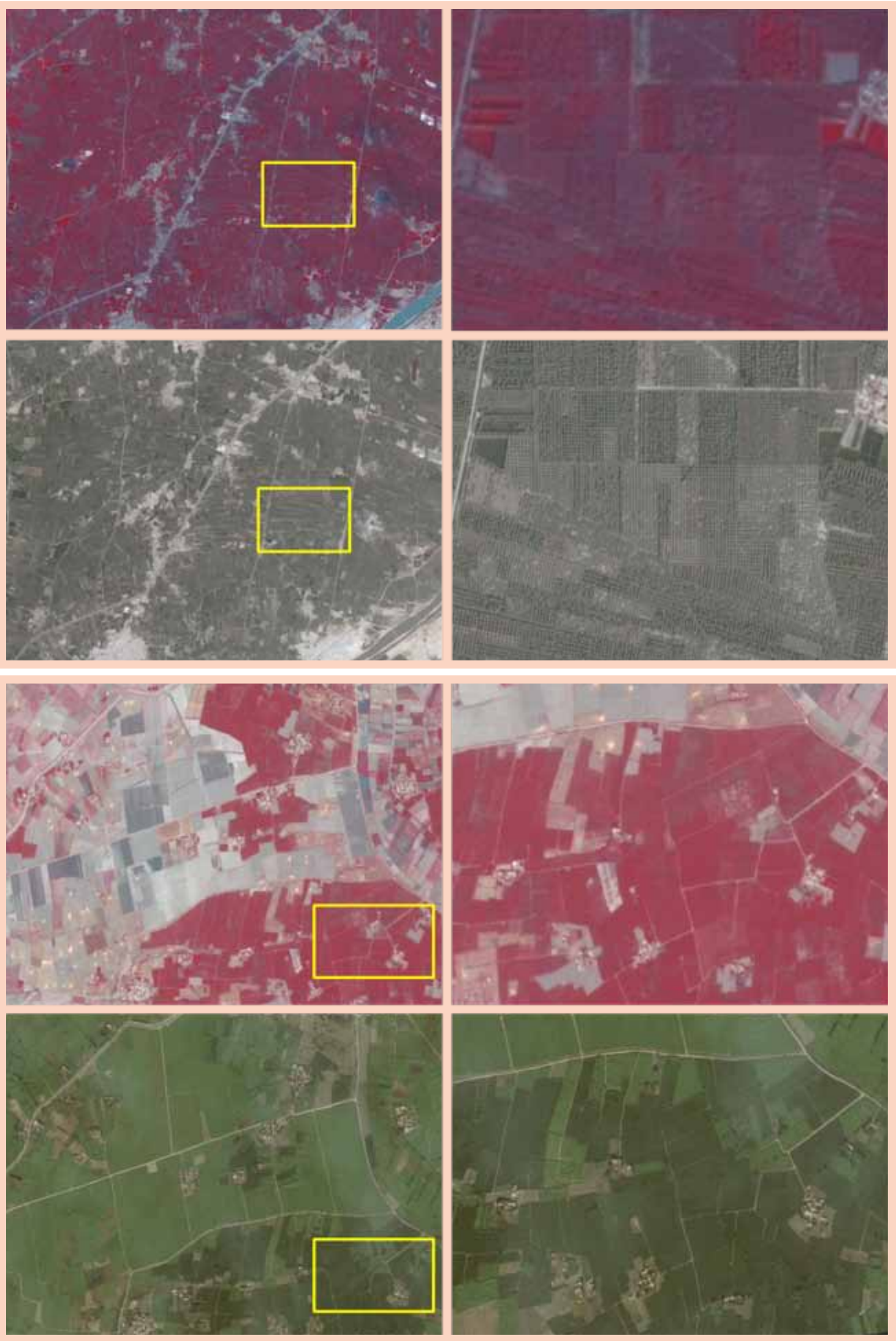
of flowing water throughout the year. Saline lakes are water bodies located near the coast where the water is brackish or saline. Lake shore is also included in the classes of water bodies and saline lake. Saline areas can show up as reflectance to the class herbaceous crop irrigated saline fields. In this case the field pattern is absent. Water logged bare area is low level land generally filled with a high water table. It must be always surrounded by agricultural area.

## 13. Snow and Glaciers

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.



PHOTO KEYS



1. ORCHARDS

Orchads - tree crop

Orchads - shrub crop

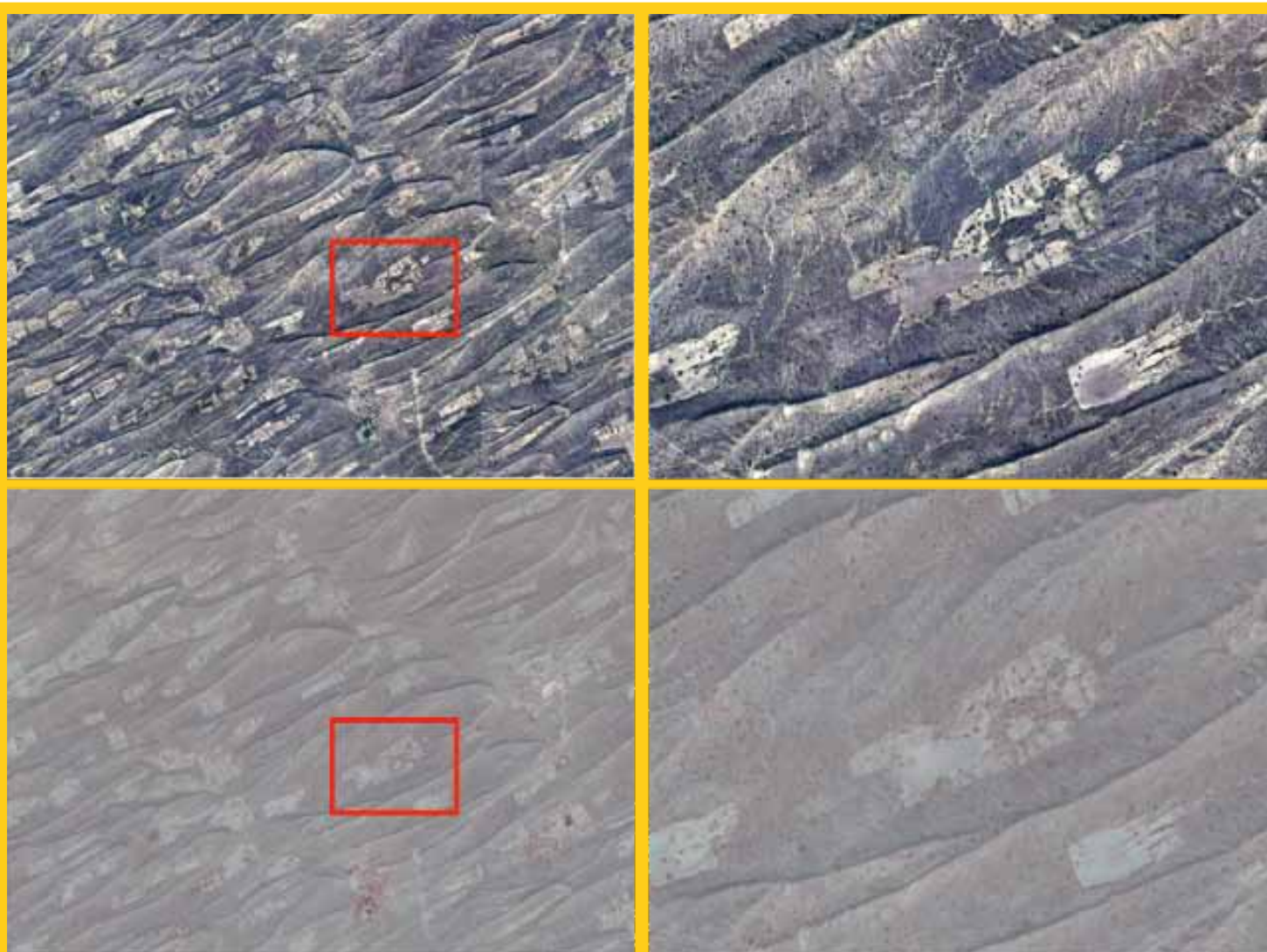


## 2. CROP IRRIGATED



Crop irrigated -  
herbaceous crop  
irrigated

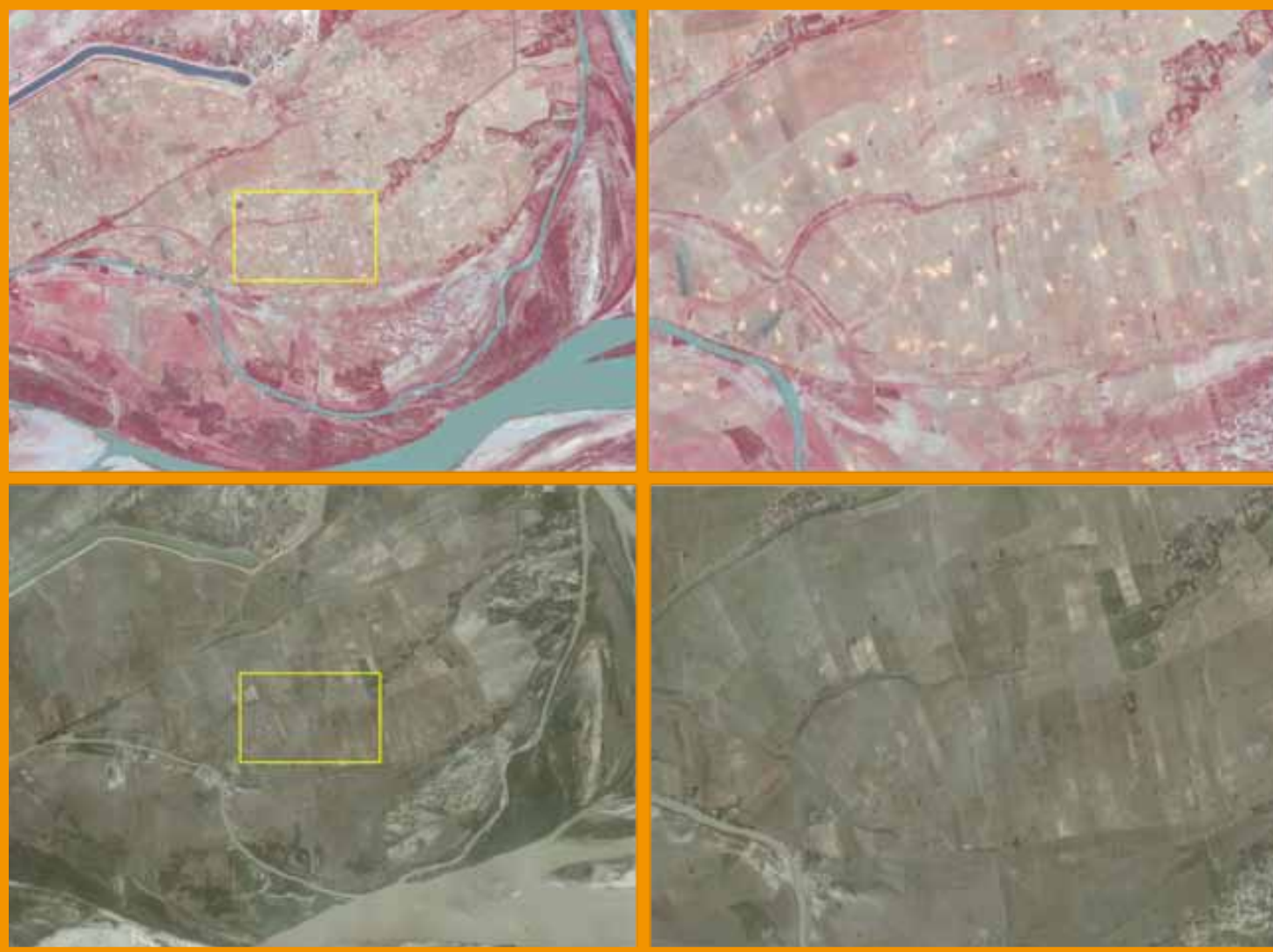
## 3. CROP MARGINAL AND IRRIGATED SALINE



Crop marginal and  
irrigated saline -  
herbaceous crop rainfed  
in desert area



4. CROP IN FLOODPLAIN



Crop rainfed in flood plain - herbaceous crop irrigated in flood plain

5. CROP RAINFED



Crop rainfed - herbaceous crop rainfed



## 6. FOREST

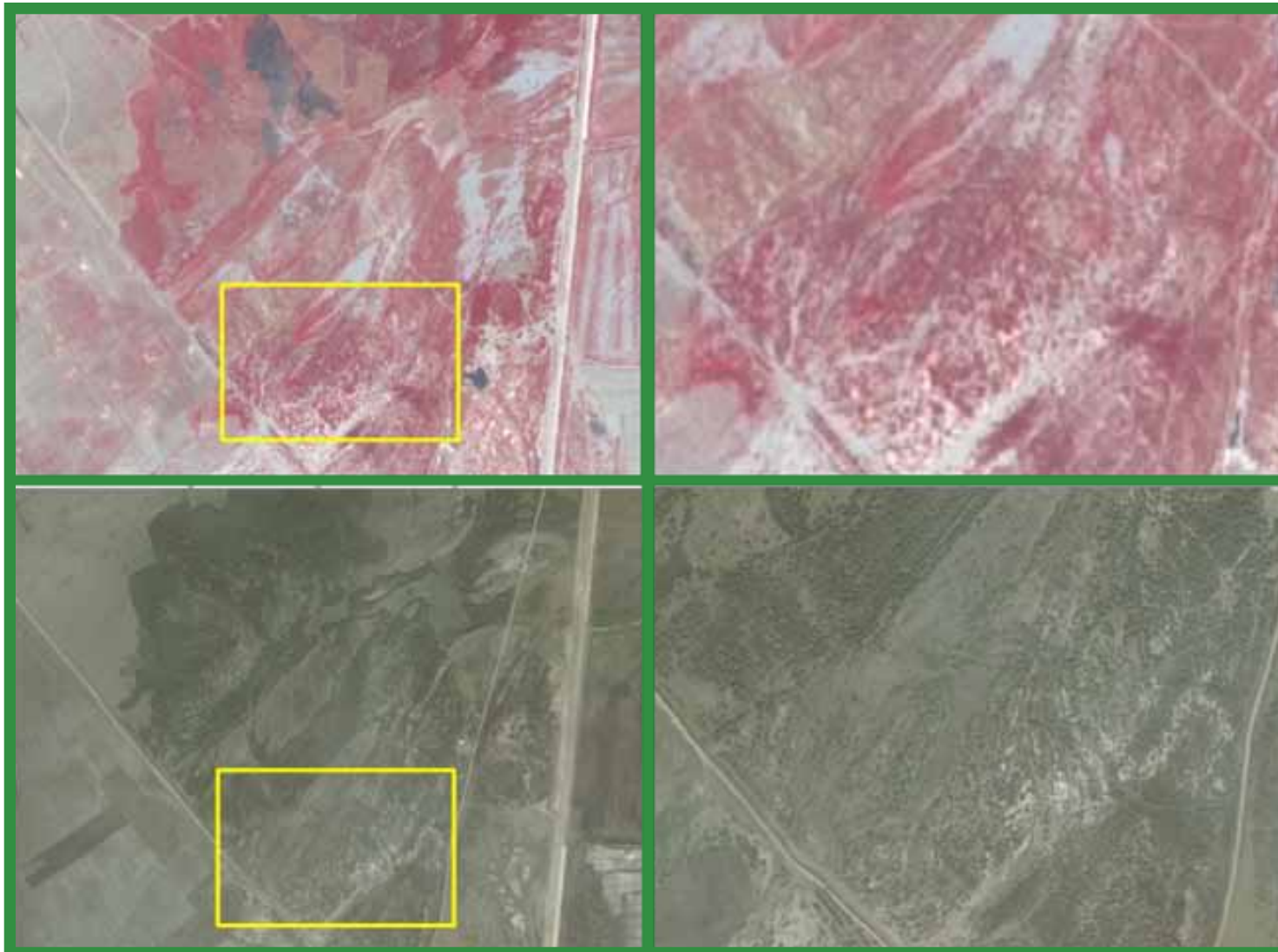


Forest - tree forest  
plantation

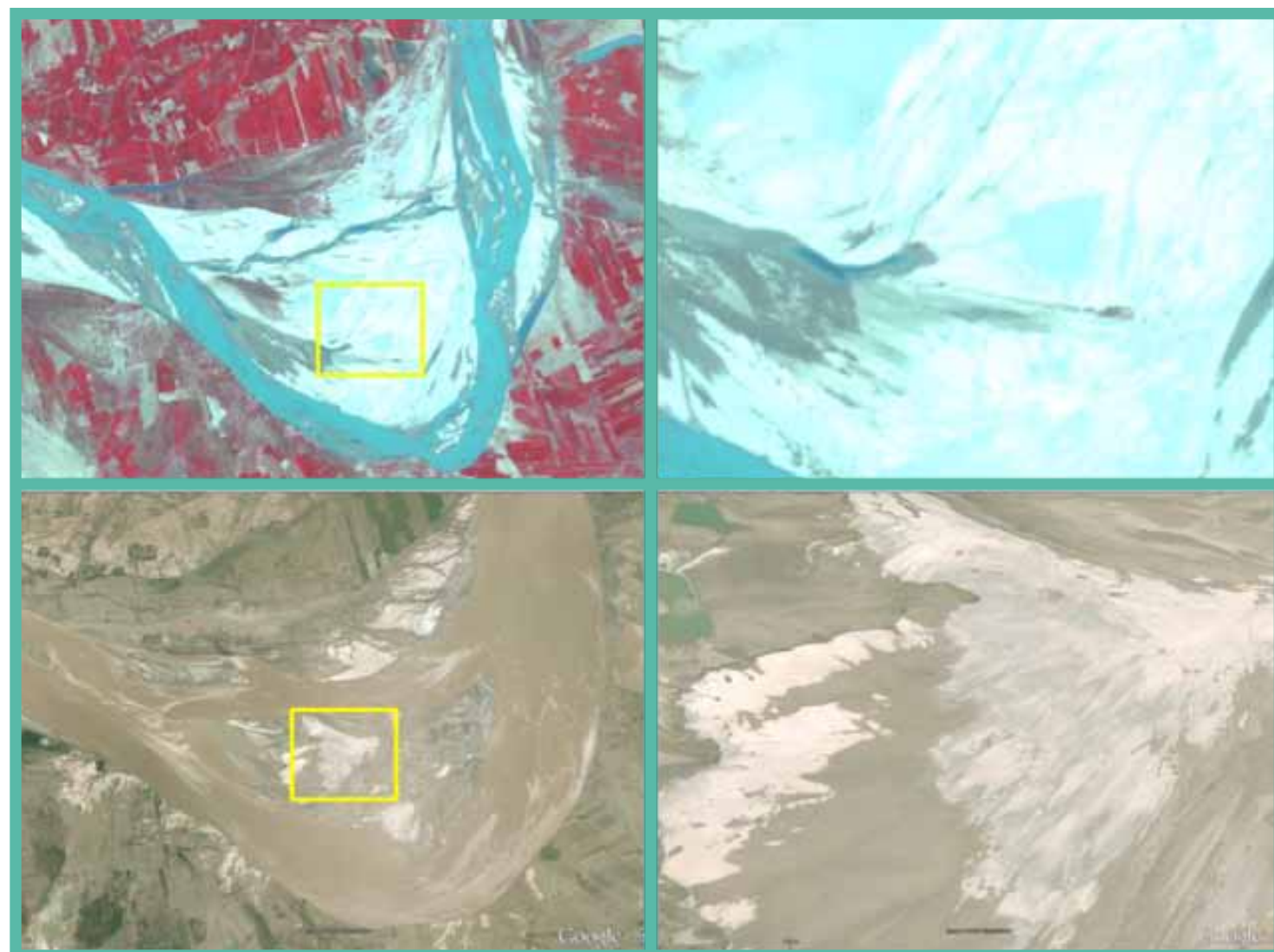


Forest - trees  
closed





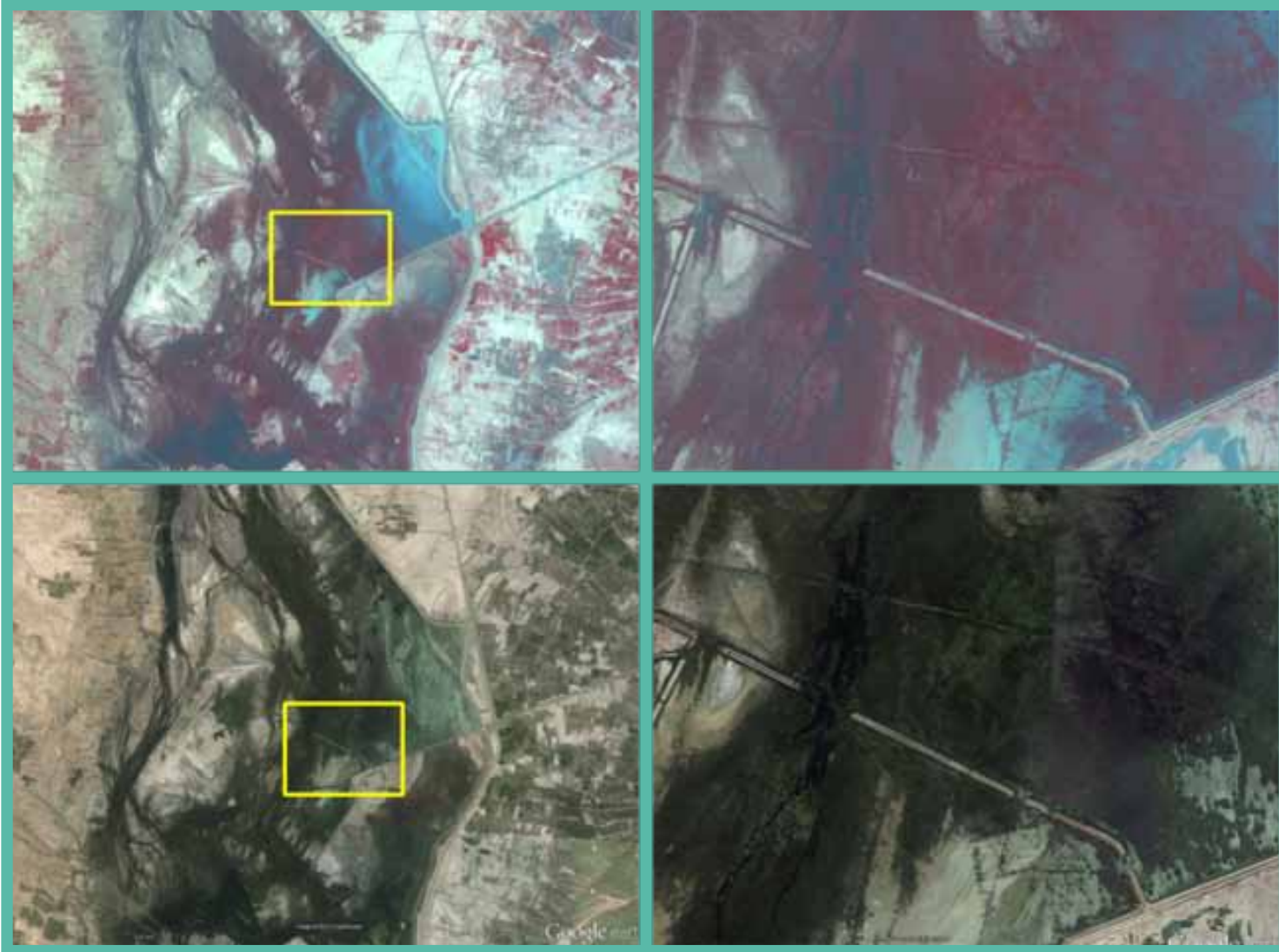
Forest - trees open



7. NATURAL VEGETATION IN  
WET AREAS

Natural vegetation  
- river bank





Natural vegetation  
- Wetland



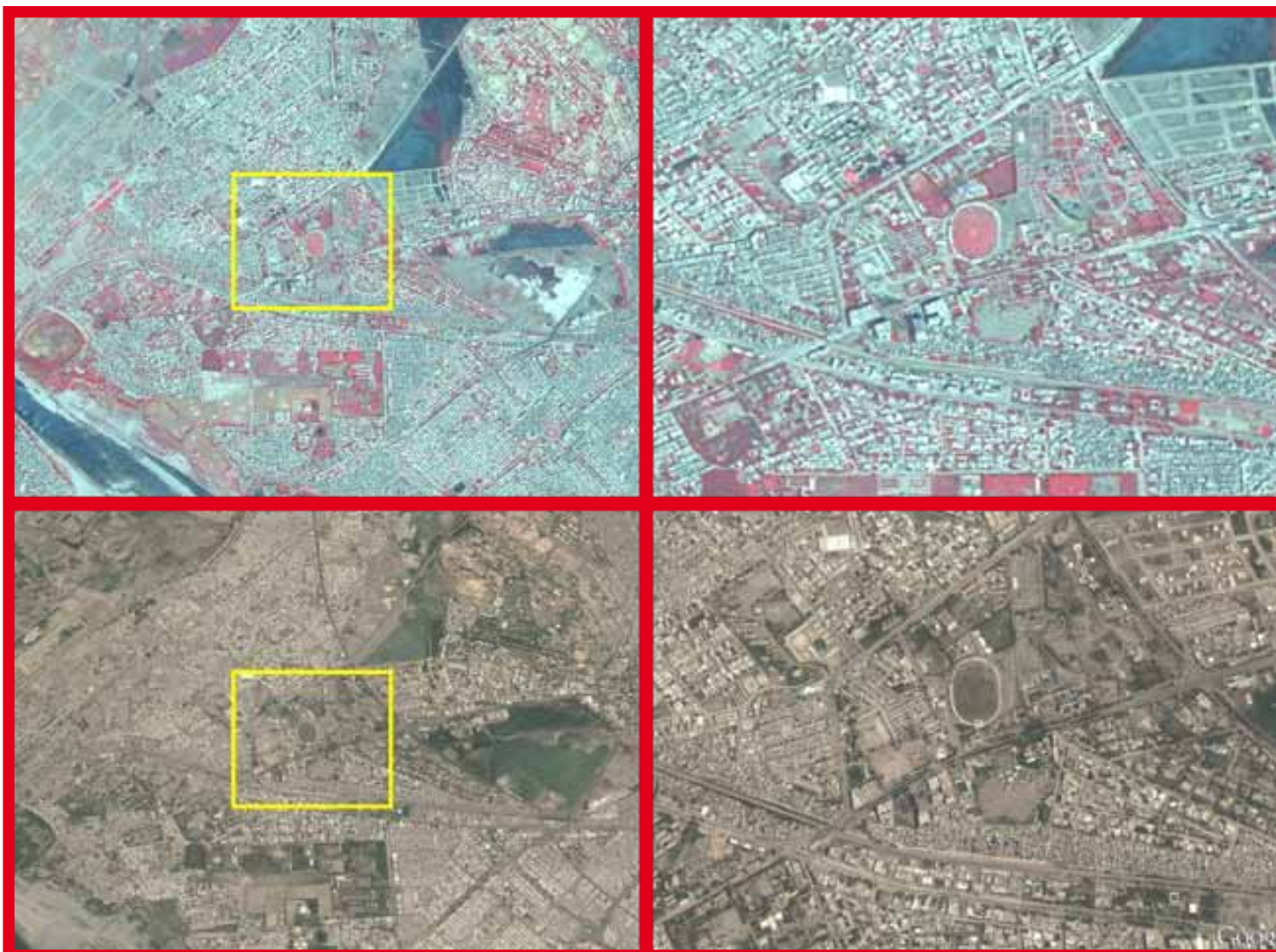
8. RANGE LANDS -  
NATURAL SHRUBS AND  
HERBS

Range lands -  
shrub closed





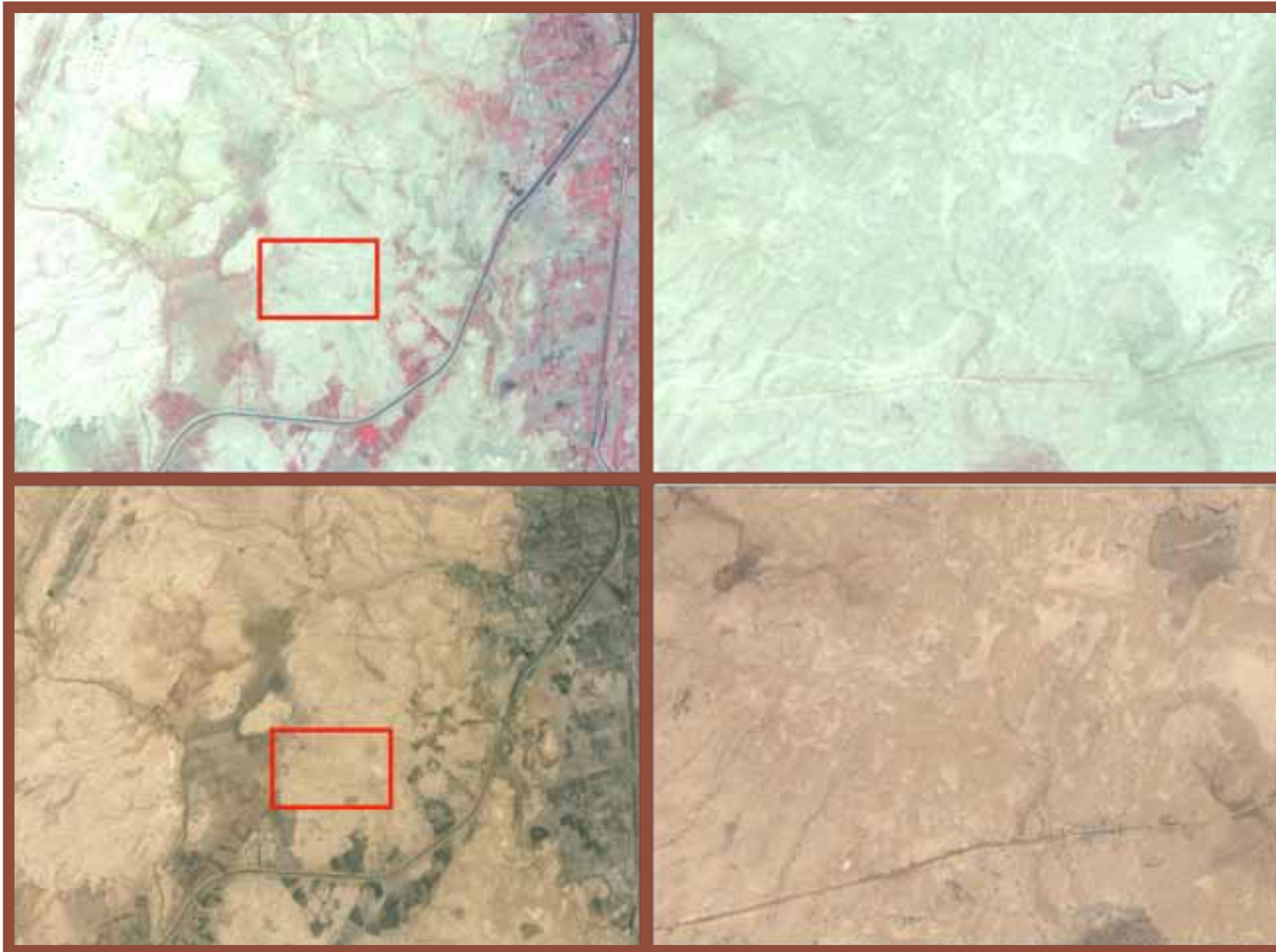
Range lands -  
shrubs open



9. BUILT-UP AREA

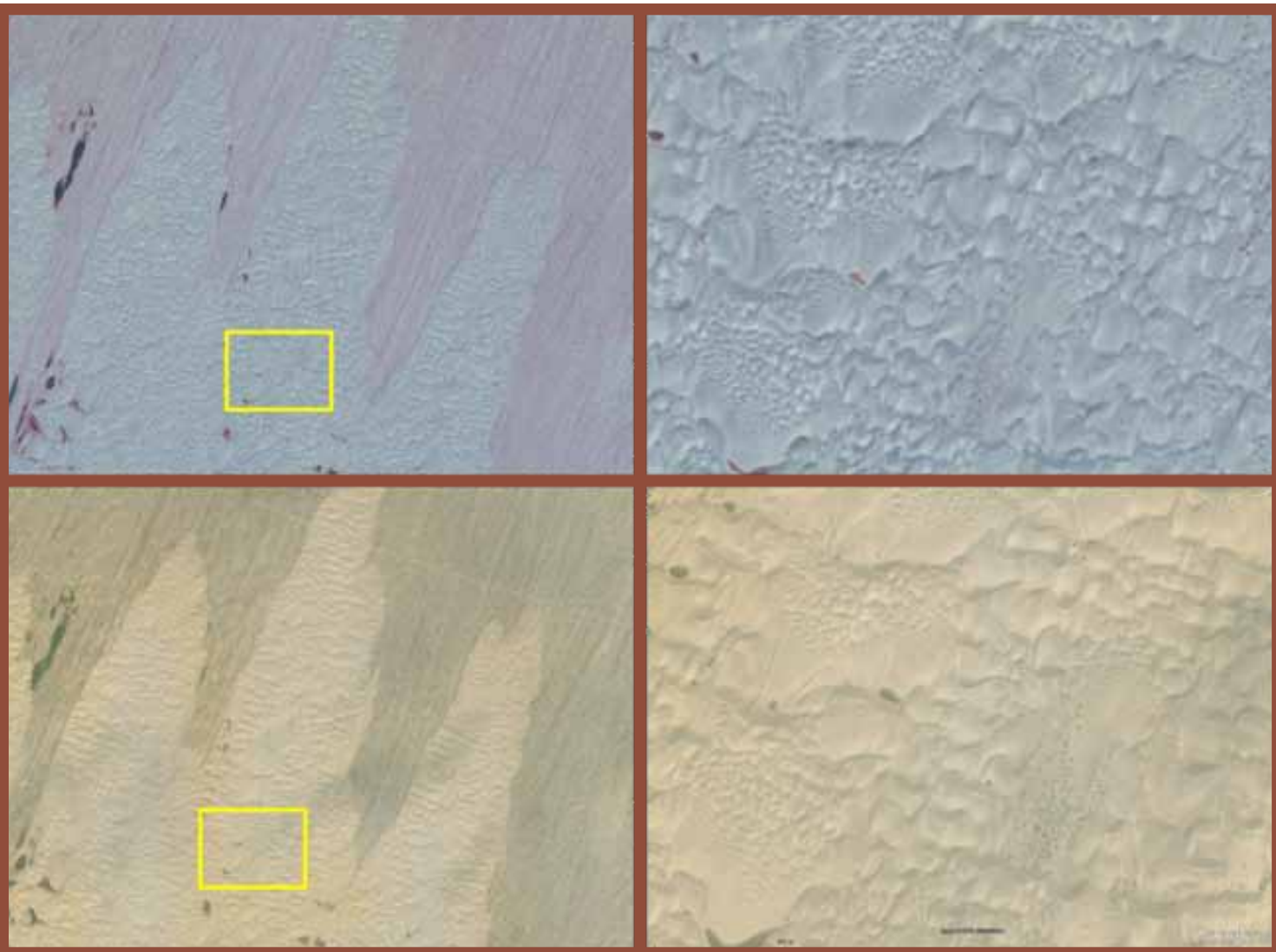
Built-up area





Bare areas - barren  
land

## 10. BARE AREAS

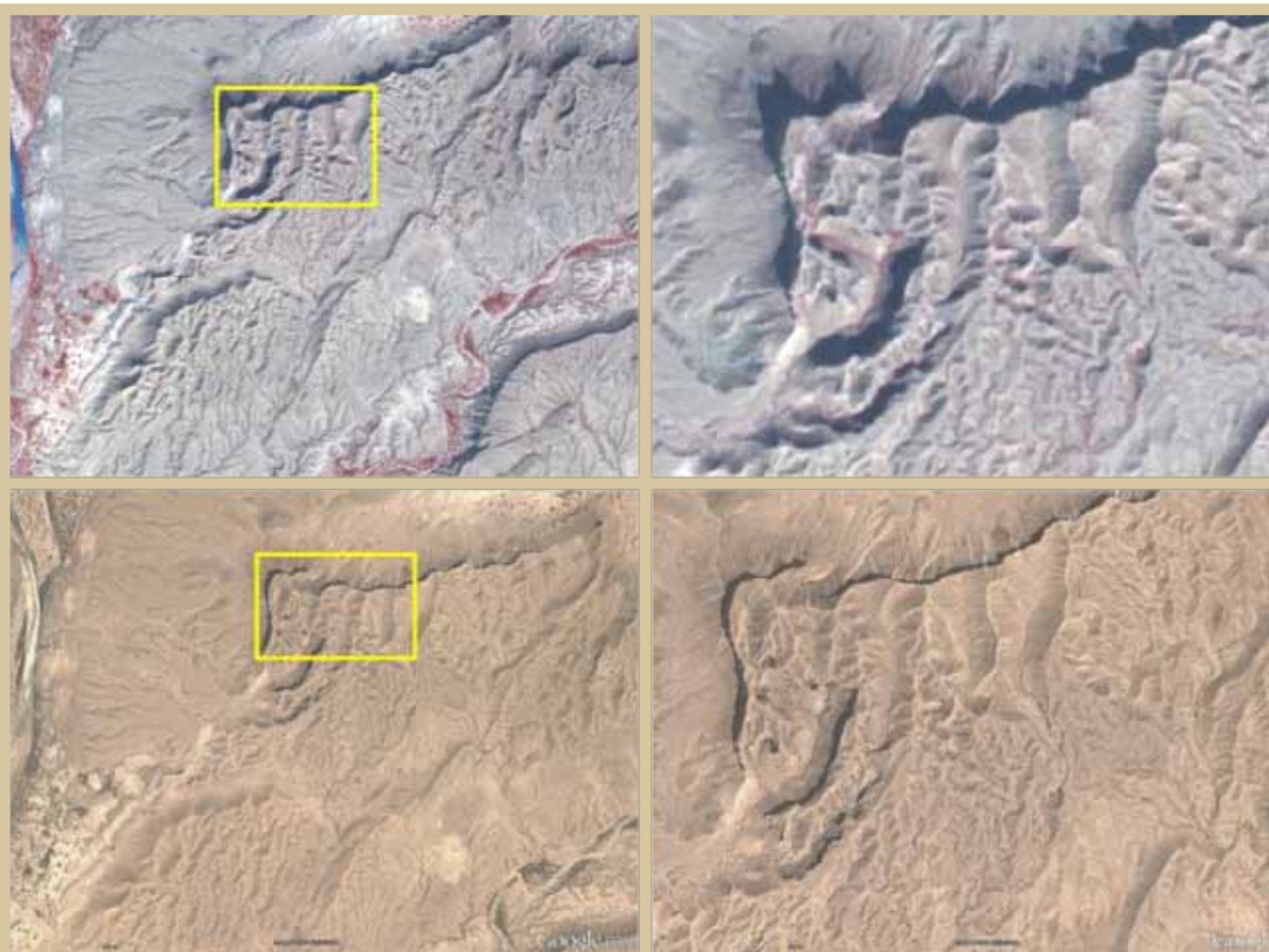
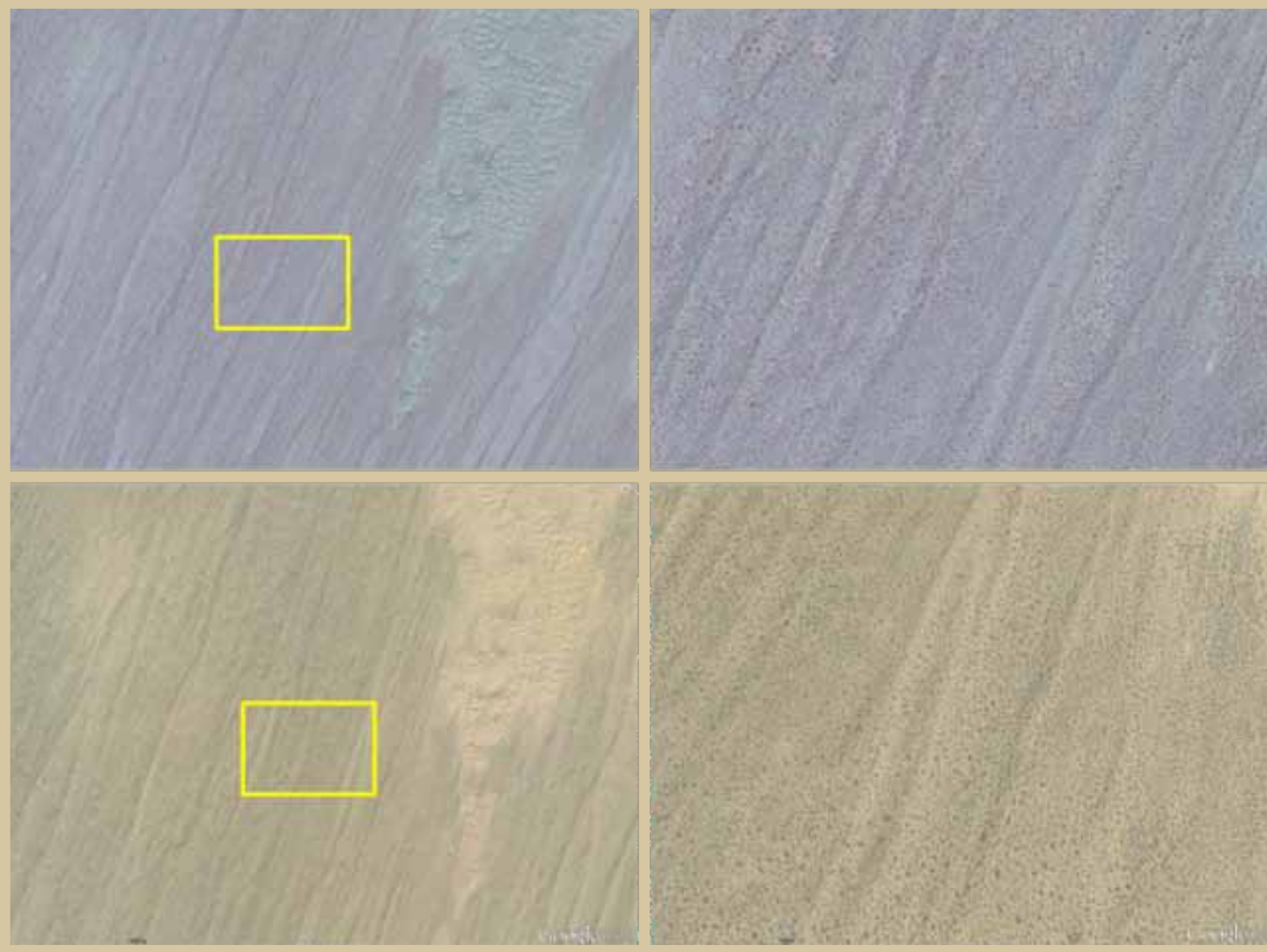


Bare areas - sand  
dunes



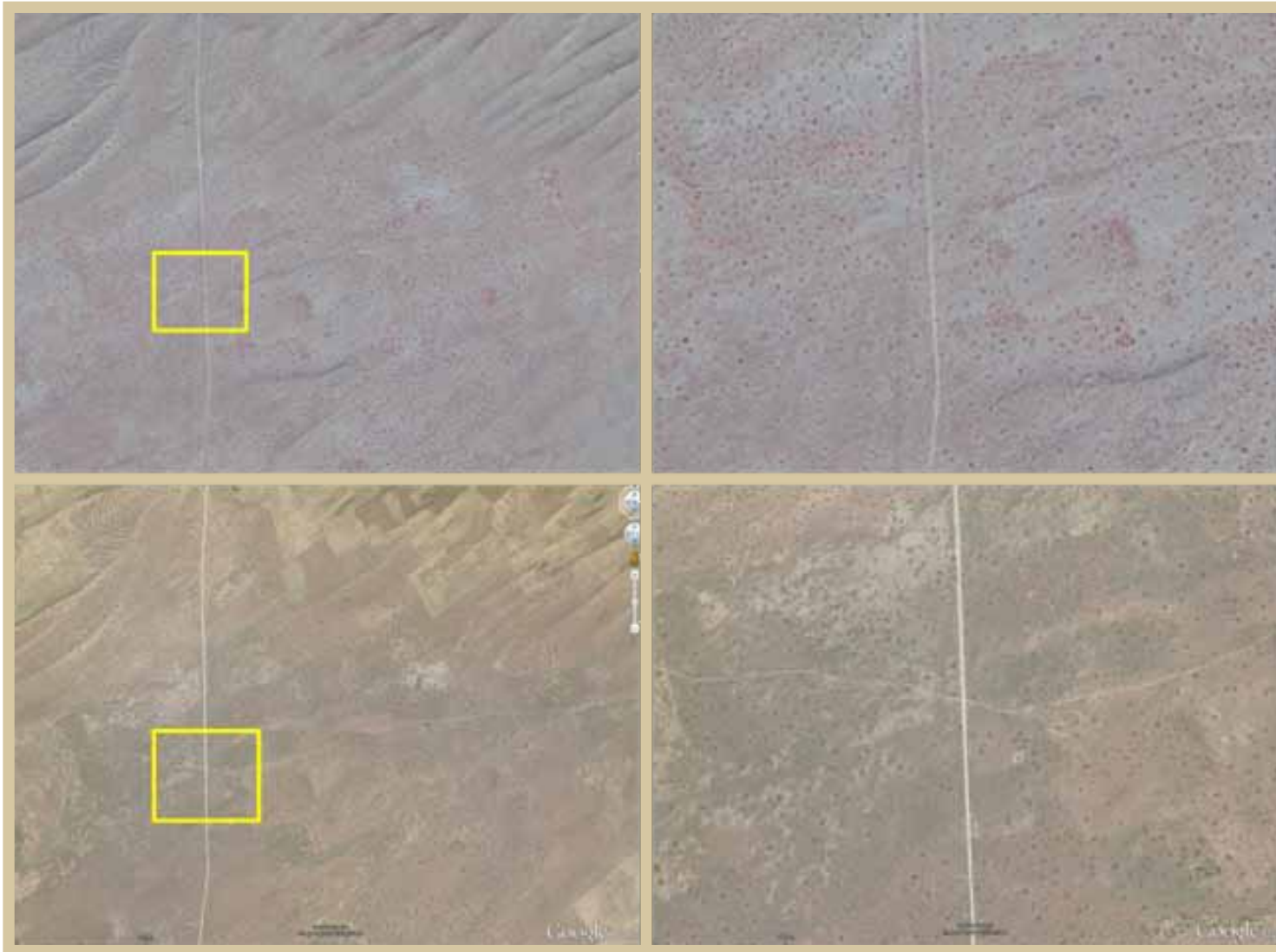
11. BARE AREAS WITH  
SPARSE NATURAL  
VEGETATION

Bare areas sparse  
- sand dunes with  
natural vegetation

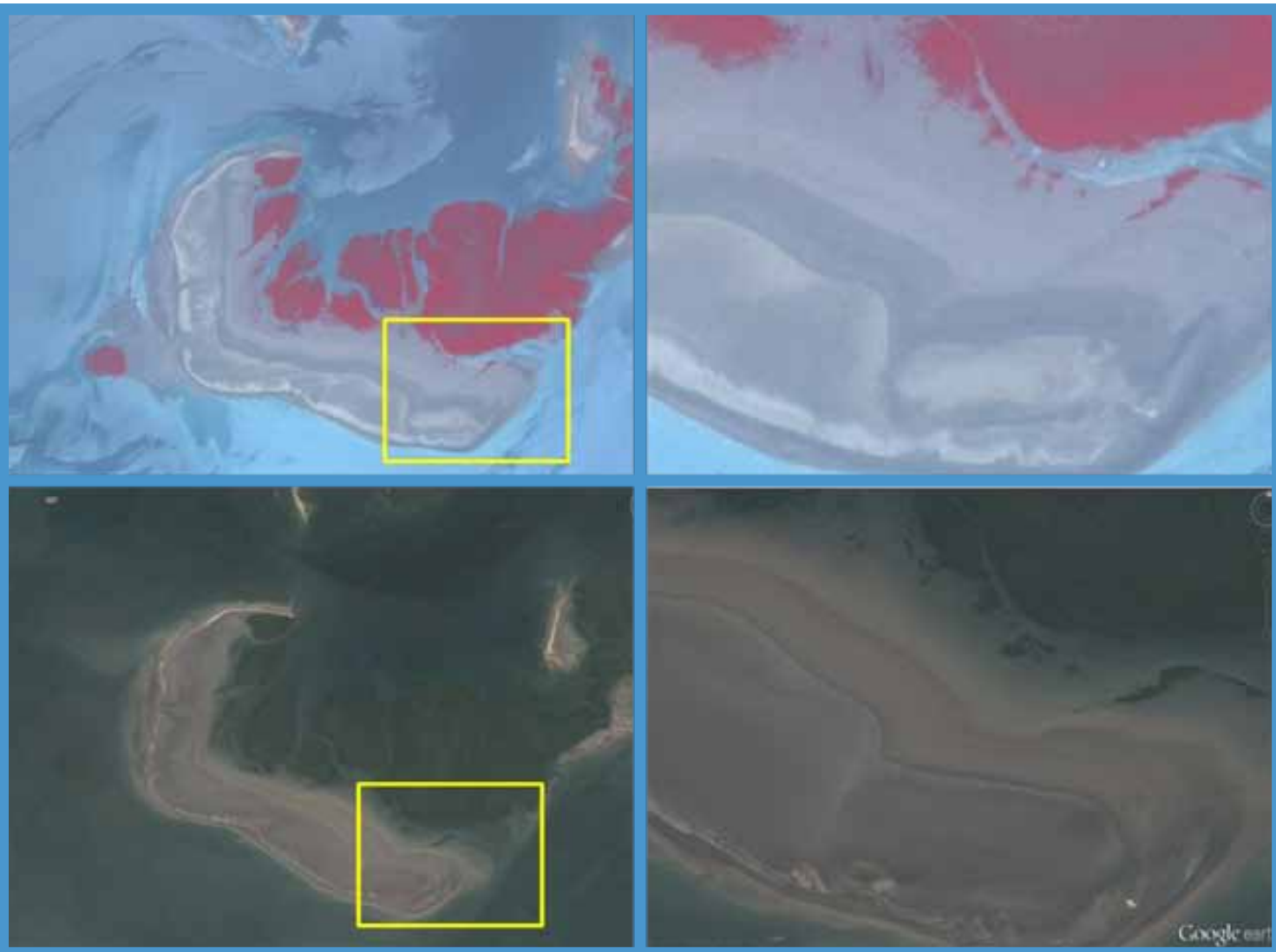


Bare areas sparse  
- bare rocks (with  
sparse vegetation)





Bare areas sparse  
- desert flat plain



12. WET AREAS

Wet areas - mud  
flats



Wet areas - river  
perennial



## FIELD VALIDATION



Natural herbs  
closed to open



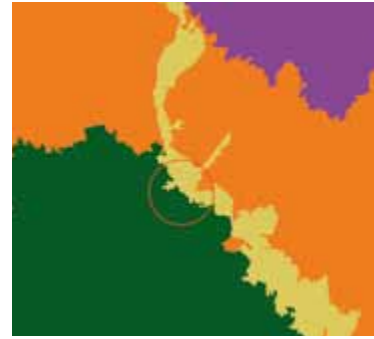
Herbaceous crop  
rainfed



Saline area



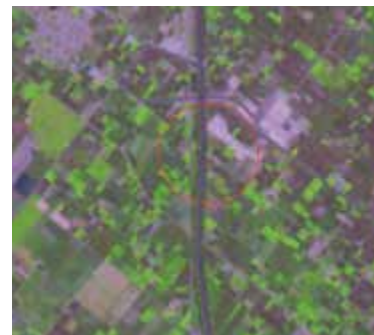




Tree closed



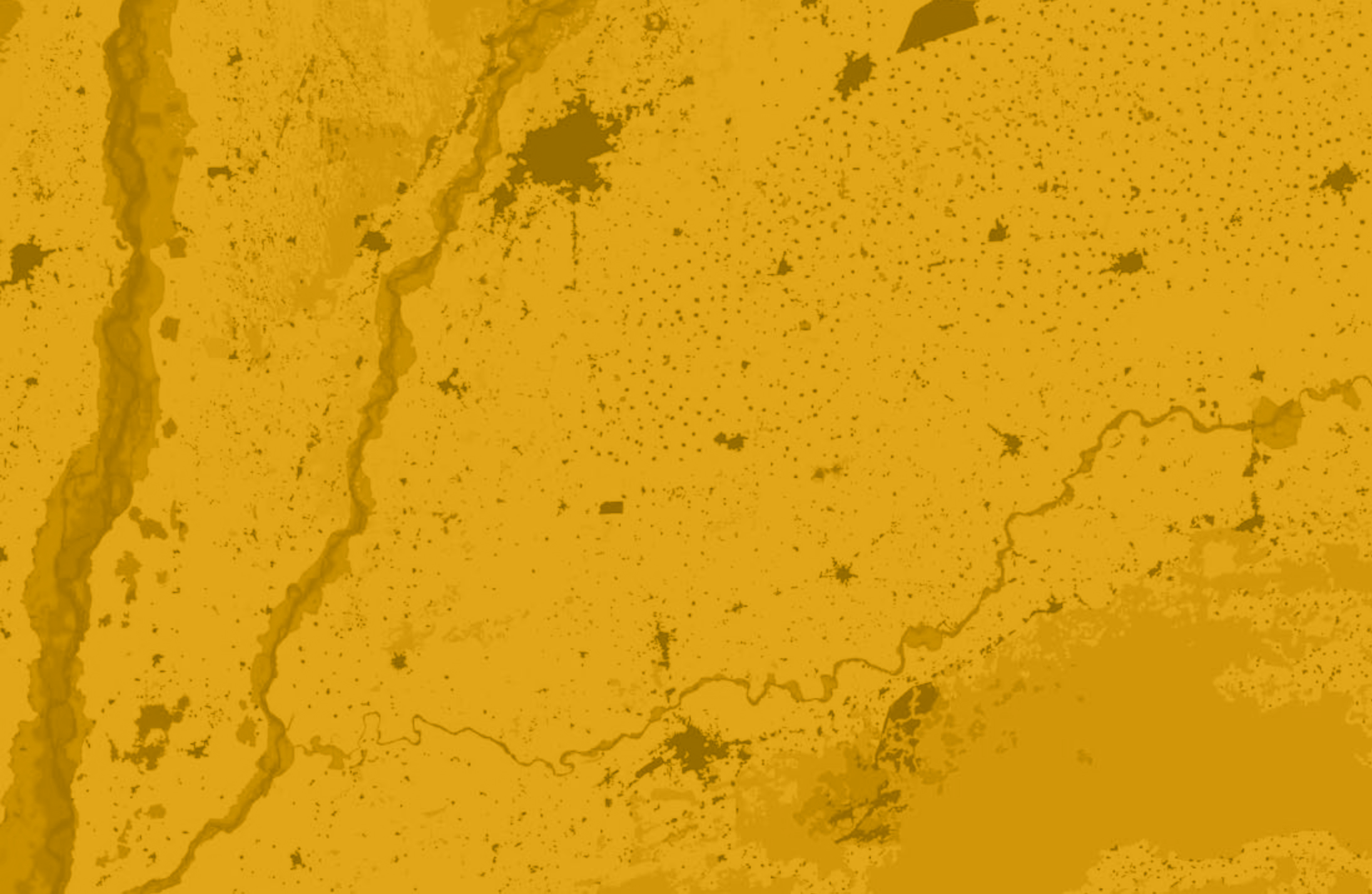
Tree crop



Water body







**MAPS & STATISTICS**  
*The Punjab Province*



## PUNJAB PROVINCE

Punjab is the largest province of Pakistan in terms of population. The name Punjab is derived from Persian words Panj – ab meaning “five” (panj) “waters” (āb), i.e., Land of Five Rivers. These five rivers are the tributaries of the Indus River namely Chenab, Jhelum, Ravi, Beas and Sutlej.

History of Punjab dates back to the Indus Valley civilization. The region has been invaded and ruled by many different empires and races including the Aryans, Persians, Greeks, Egyptians, Afghans, and Mongols. The population of Punjab had been pre-dominantly Hindu with large Buddhist minorities before it was conquered by Muhammad bin Qasim in 712 AD. Islam later spread through the teachings of various sufi saints. The Mughals controlled the region from 1524-1739. It was their reign that saw the construction of the great architectural wonders such as the Badshahi Mosque and the Shalimar Gardens. Following the decline and subsequent fall of the Mughal Empire, Maharaja Ranjeet Singh was the most prominent ruler of Punjab. He established

the Sikh Empire that lasted from 1799-1849. British Empire took control and annexed Punjab in 1849 after two Anglo Sikh Wars. Punjab was at the heart of the independence struggle of modern Pakistan; the Pakistan resolution of 1940 was passed in Lahore. The province also hosts heritage sites of Taxila, Rohtas Fort, Ruins of Harappa and Lahore Shahi Fort.

The province lies predominantly on plains, however, there are some hilly areas in the north west and extreme south west. There is also a plateau adjacent to the mountains known as the Potohar plateau and a desert belt in the South Eastern part known as Cholistan desert. All major rivers originating from Himalayas pass through Punjab. They are primeval in nature and the volume of water increases in the summer after the monsoon rains, resulting, at times, in floods. Most areas in Punjab experience warm winters, often accompanied by rain. By mid-February, the temperature begins to rise; springtime weather continues until mid-April, when the summer heat sets in. The

temperature ranges from  $-2^{\circ}$  to  $45^{\circ}\text{C}$ , but can reach  $47^{\circ}\text{C}$  in summer and touch down to  $-5^{\circ}\text{C}$  in winter.

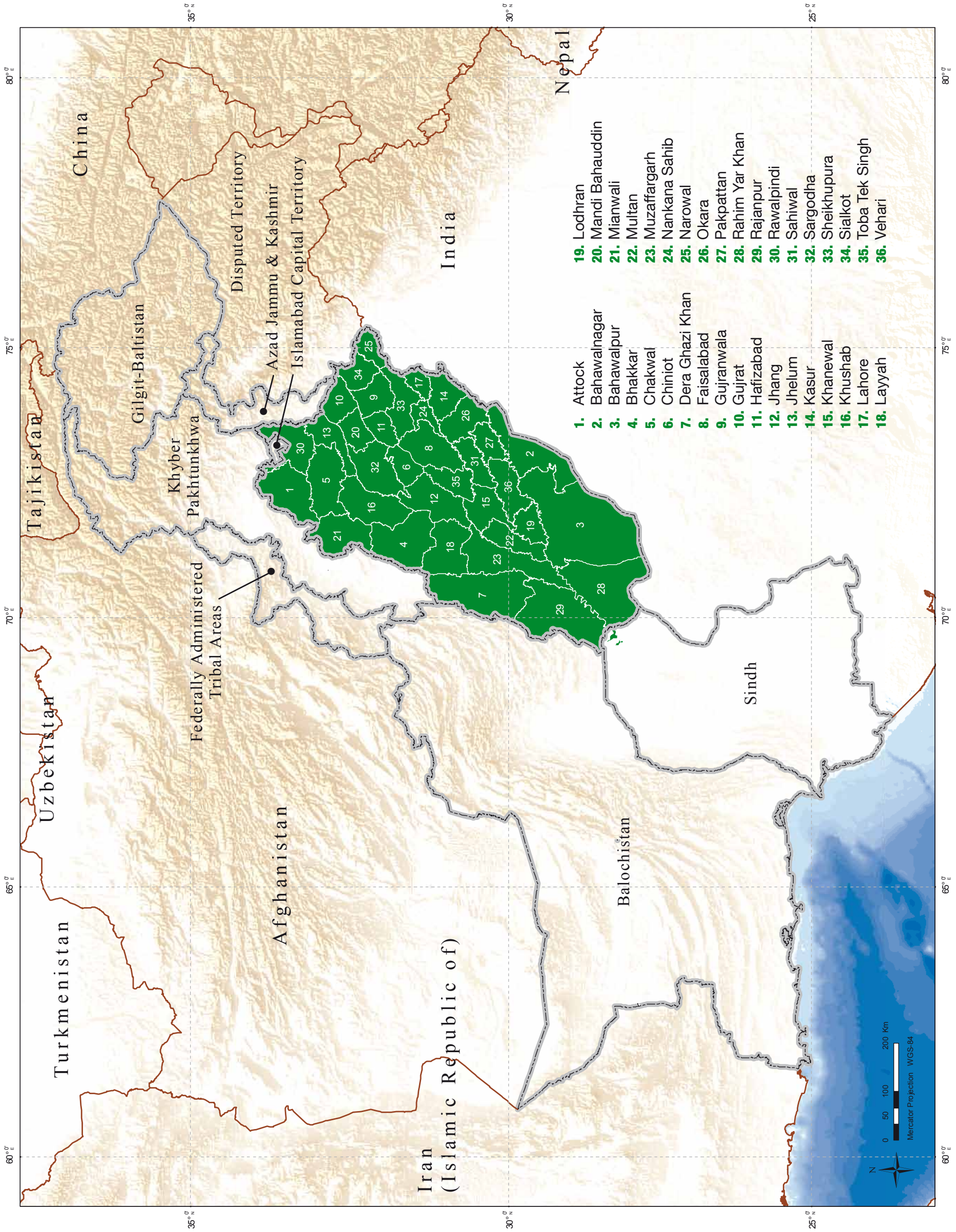
The province contains one of the largest irrigation systems of the world with about 3000 irrigated channels present all over the province. Due to the presence of extensive irrigated system, Punjab is rich with an agricultural production.. Cotton, wheat, rice, sugarcane, millet, corn, oilseeds, pulses, vegetables, and fruits such as kinoo (orange), mango etc are the major agricultural products. Along with the agricultural activities, the province developed significantly in industrial production also. Its manufacturing industries produce textiles, sports goods, Heavy machinery, electrical appliances, surgical instruments, cement, vehicles, auto parts, IT equipment, metals, sugar mill plants, aircraft, cement plants, agriculture machinery, bicycles and rickshaws, floor coverings, and processed foods etc.

The Punjab province comprises of 36 districts which are discussed separately.



Source: SUPARCO



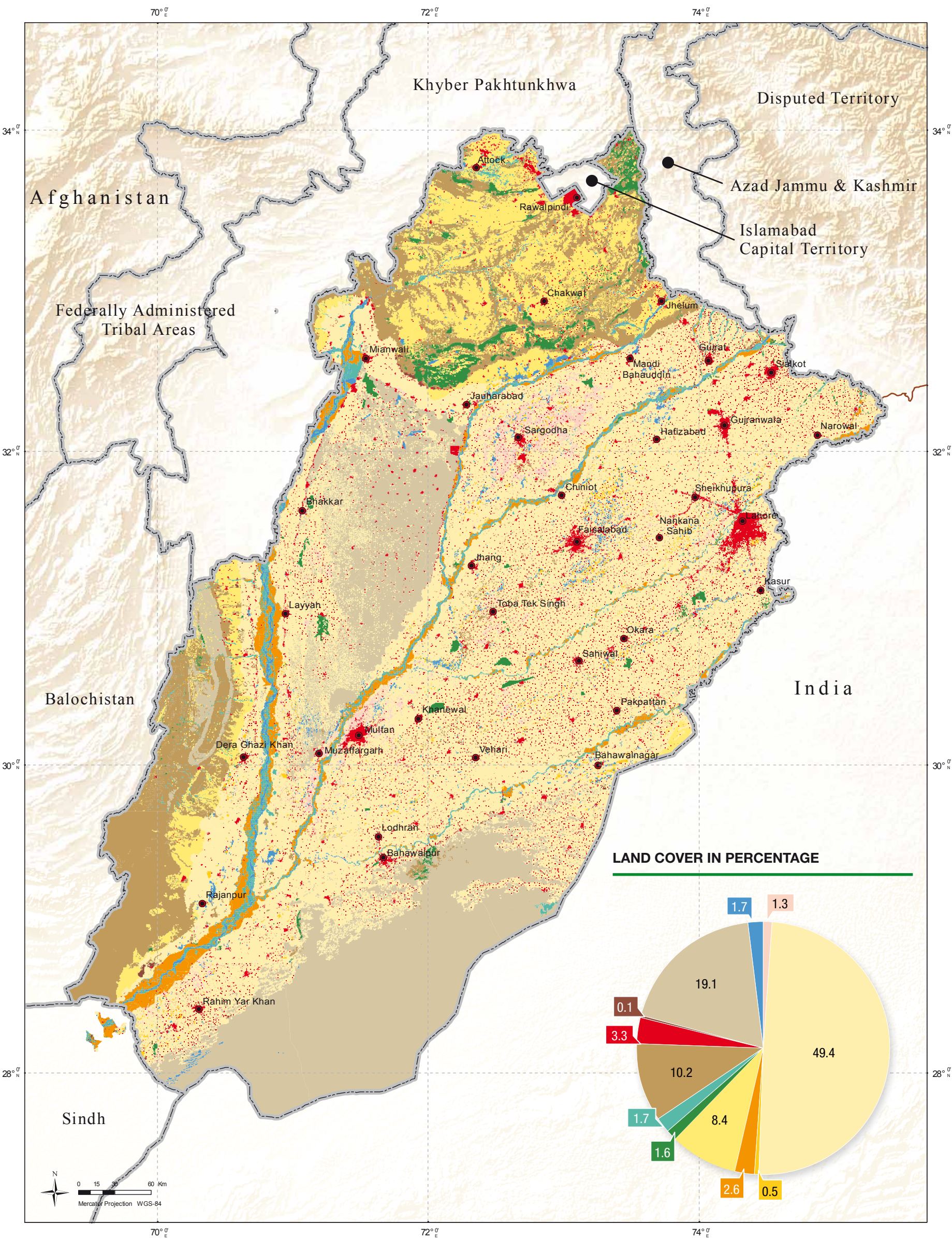




### DISTRIBUTION OF LAND COVER IN THE PROVINCE OF PUNJAB IN KM<sup>2</sup>

District	Orc	Clr	Cls	Cfp	CRa	NtM	NvW	Rsh	Bui	Bar	Bav	Wet	Snw
Attock	3.33	0	0	8.19	4,112.83	265.67	175.74	2,007.88	131.62	2.40	0.51	73.51	0
Bahawalnagar	6.38	5,720.10	88.22	145.04	327.33	4.74	118.42	12.83	240.39	38.81	1,874.43	96.59	0
Bahawalpur	4.91	5,120.94	6.94	39.13	0.36	104.93	54.91	169.55	214.74	24.85	18,146.30	40.66	0
Bhakkar	12.32	3,144.30	1.72	101.98	0.07	41.13	64.28	12.05	189.83	1.38	4,483.61	107.71	0
Chakwal	0.03	0	0	0.40	3,815.97	502.59	47.76	2,005.61	138.36	1.93	0	43.20	0
Chiniot	39.80	2,187.52	7.26	150.64	0	1.94	104.97	11.47	79.45	3.61	0	72.60	0
Dera Ghazi Khan	5.70	2,680.05	39.59	382.43	1,812.28	55.13	531.34	4,341.82	164.89	23.99	1,685.11	224.47	0
Faisalabad	30.14	5,023.01	119.88	20.60	0	11.43	12.73	31.09	454.01	0.21	0	154.51	0
Gujranwala	0.15	3,225.17	5.64	35.14	0	12.18	47.52	0.53	246.35	2.04	0	62.75	0
Gujrat	0.83	2,134.21	0.09	58.31	283.65	16.29	150.19	294.68	188.09	12.54	0.80	71.09	0
Hafizabad	0.23	2,105.40	35.30	29.55	0	5.20	50.56	0.36	66.29	1.93	0	65.54	0
Jhang	15.42	4,235.85	41.69	285.15	0	61.95	188.77	49.90	132.72	2.32	1,014.69	153.68	0
Jhelum	0.19	188.92	37.09	83.78	1,386.69	169.40	108.17	1,317.20	104.64	3.97	1.79	224.88	0
Kasur	19.49	3,463.89	20.02	70.70	0	92.97	48.74	23.96	191.01	1.29	0	77.79	0
Khanewal	155.41	3,644.06	25.05	91.49	0	56.25	28.64	44.55	162.40	3.40	0	79.15	0
Khushab	8.75	1,440.96	28.06	83.56	722.89	685.44	39.63	429.67	205.24	36.67	2,725.68	149.68	0
Lahore	4.02	1,048.33	28.16	4.70	0	3.35	7.49	8.50	621.06	1.36	0	23.79	0
Layyah	59.18	2,980.43	0	398.01	0.01	111.04	145.28	21.35	124.93	0.31	2,312.78	117.70	0
Lodhran	10.30	2,711.75	23.22	13.54	0	6.21	18.06	2.26	87.39	2.26	18.84	21.31	0
Mandi Bahauddin	102.77	2,231.91	1.58	61.52	0.14	41.19	68.60	8.62	96.48	2.36	0	72.55	0
Mianwali	5.66	2,089.60	0	300.46	770.12	124.55	308.75	1,397.27	184.53	24.94	382.05	242.96	0
Multan	347.56	2,787.35	20.31	108.06	0	0.04	51.20	1.33	263.39	0.26	36.29	56.49	0
Muzaffargarh	272.18	4,695.95	57.13	865.53	0.62	4.86	535.54	55.43	149.54	1.58	1,189.11	439.33	0
Nankana Sahib	16.02	1,451.16	48.84	43.20	0	3.70	14.64	0.78	54.05	0.46	0	29.34	0
Narowal	0.25	1,947.47	4.76	212.69	0	13.74	39.26	30.54	85.54	7.23	0	19.20	0
Okara	11.66	3,935.00	47.50	82.52	0	30.00	57.86	4.77	192.50	0.49	0	58.95	0
Pakpattan	5.37	2,514.54	7.11	27.37	0	6.35	20.86	6.56	111.13	3.33	0	10.91	0
Rahim Yar Khan	160.63	5,891.23	116.33	508.02	0	50.67	120.54	28.01	272.63	30.46	5,287.23	156.29	0
Rajanpur	9.66	2,694.63	27.12	863.77	1,328.70	8.82	179.79	6,885.02	64.76	39.69	21.67	216.54	0







ATTOCK

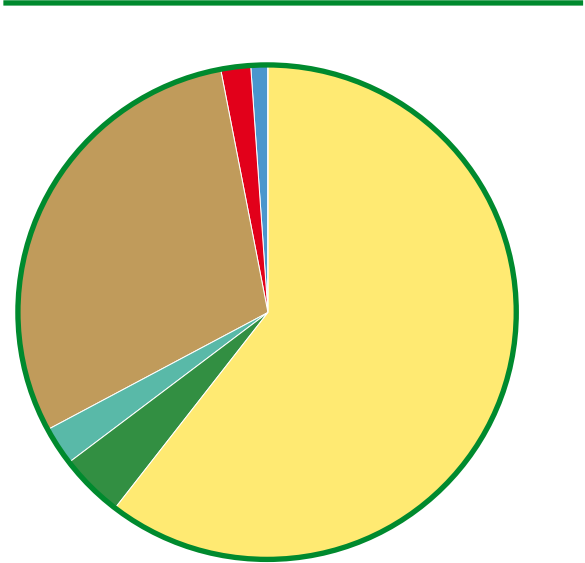
Attock district is situated at the left bank of Indus River. The famous Attock Fort is a major land mark of district Attock. Its climate comprises of hot summers and cold winters. The district mainly occupies hills, plateaus and dissected plains. The Indus River flows on the northern and western borders of the district. Attock comprises of six tehsils: Attock, Fateh Jang, Pindi Gheb, Jand, Hazro and Hasan Abdal. The district headquarter is located at Attock.

INDEX MAP



Source: Wikipedia

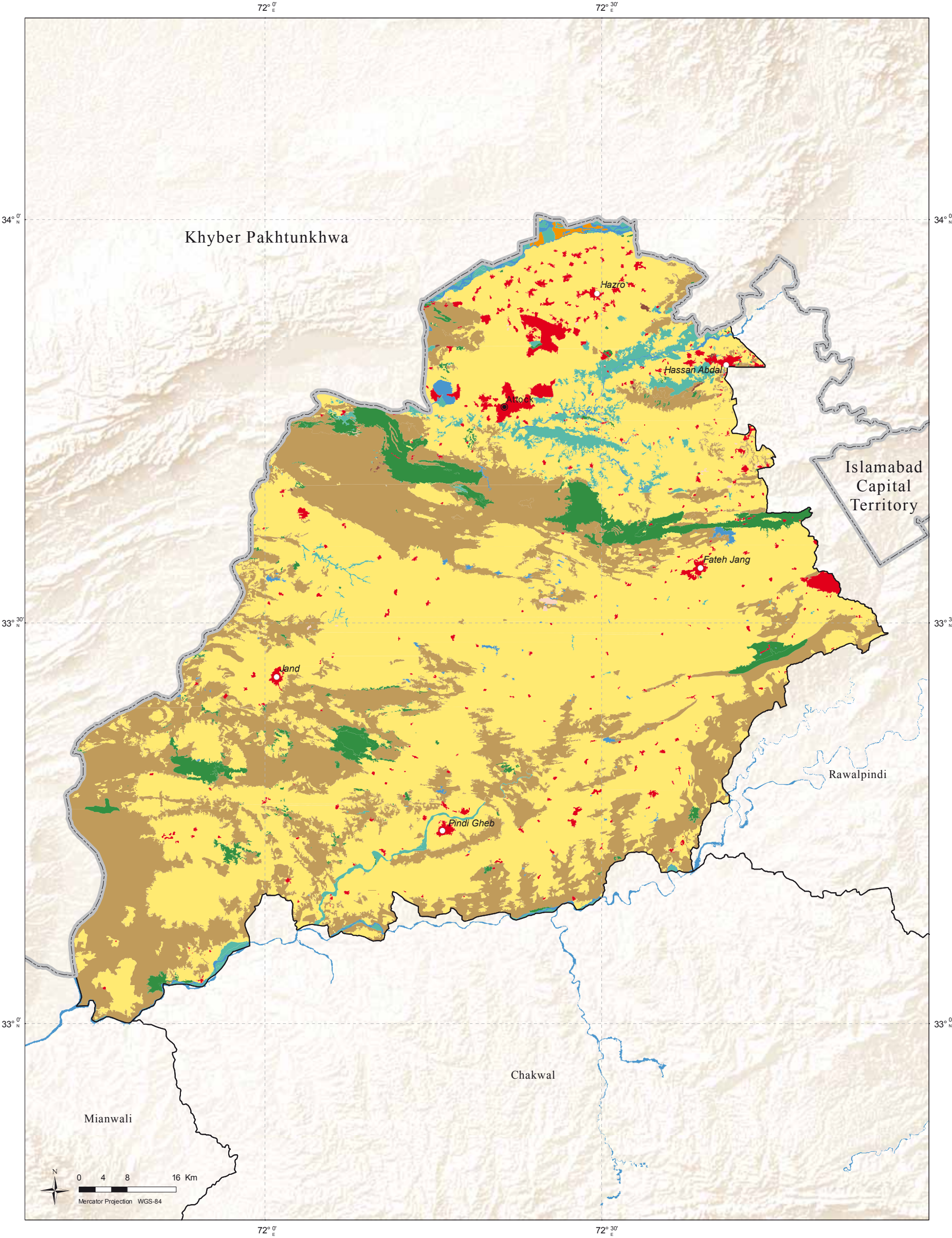
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	3.33	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	8.19	0.1
Crop Rainfed	4,112.83	60.6
Forest - Natural Trees and Mangroves	265.67	3.9
Natural Vegetation in Wet Areas	175.74	2.6
Range Lands - Natural Shrubs and Herbs	2,007.88	29.6
Built-up	131.62	1.9
Bare Areas	2.40	0.0
Bare Areas with Sparse Natural Vegetation	0.51	0.0
Wet Areas	73.51	1.1
Snow and Glaciers	0.00	0.0
Grand Total	6,781.68	





BAHAWALNAGAR

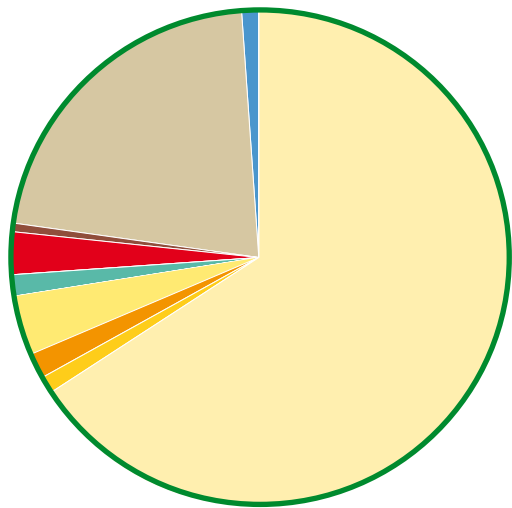
Bahawalnagar district is located in the east of Punjab. It is mainly an agricultural region with some desert region; Cholistan. The district has a hot desert climate with hot summers and mild winters. Precipitation mostly falls in the monsoon season from June to August. Some rain also falls from February to April. The district has five tehsils: Bahawalnagar, Haroonabad, Chishtian, Fort Abbas and Minchinabad. The district headquarter is located at Bahawalnagar.

INDEX MAP



Source: www.panoramio.com

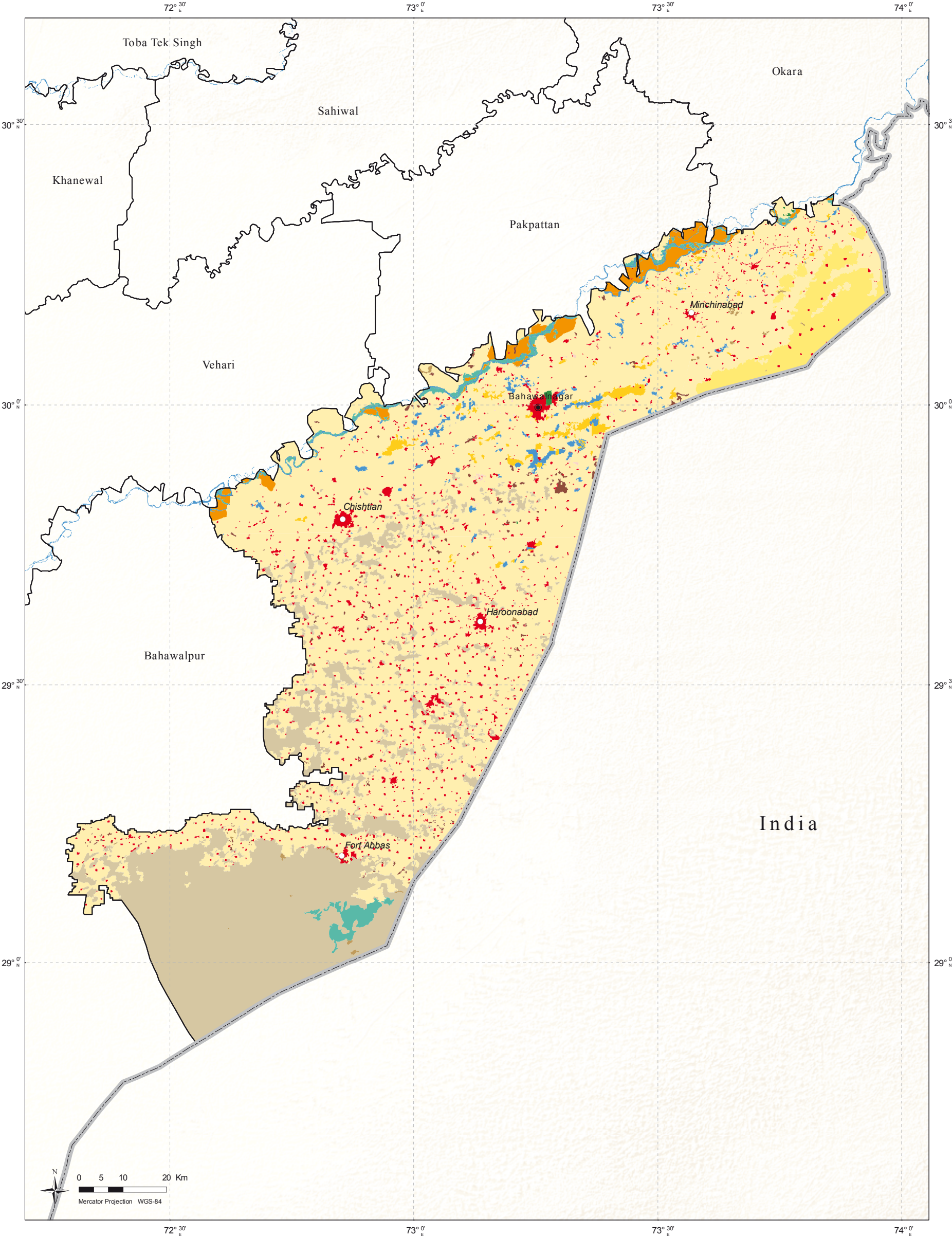
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	6.38	0.1
Crop Irrigated	5,720.10	66.0
Crop Marginal and Irrigated Saline	88.22	1.0
Crop in Flood Plain	145.04	1.7
Crop Rainfed	327.33	3.8
Forest - Natural Trees and Mangroves	4.74	0.1
Natural Vegetation in Wet Areas	118.42	1.4
Range Lands - Natural Shrubs and Herbs	12.83	0.1
Built-up	240.39	2.8
Bare Areas	38.81	0.4
Bare Areas with Sparse Natural Vegetation	1,874.43	21.6
Wet Areas	96.59	1.1
Snow and Glaciers	0.00	0.0
Grand Total	8,673.29	







BAHAWALPUR

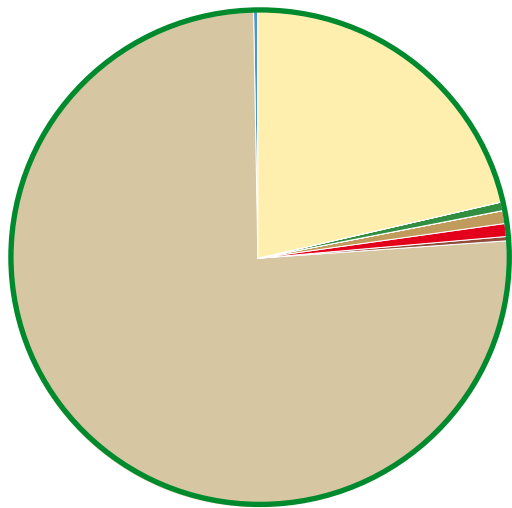
Bahawalpur district comprises dynamic landscapes that include irrigated portions and a vast area of Cholistan desert, covering approximately two-thirds of the district. The main crops of the district are cotton, sugarcane, wheat, sunflower seeds, rape-mustard seeds and rice. Citrus, Mangoes, dates and guavas are some of the exports from the district. Bahawalpur comprises of five tehsils: Bahawalpur, Ahmedpur East, Hasilpur, Khairpur Tamewali and Yazman. The district headquarter is located at Bahawalpur. The district hosts one of the few natural safari parks of Pakistan; the Lal Suhanra National Park.

INDEX MAP



Source: www.panoramio.com

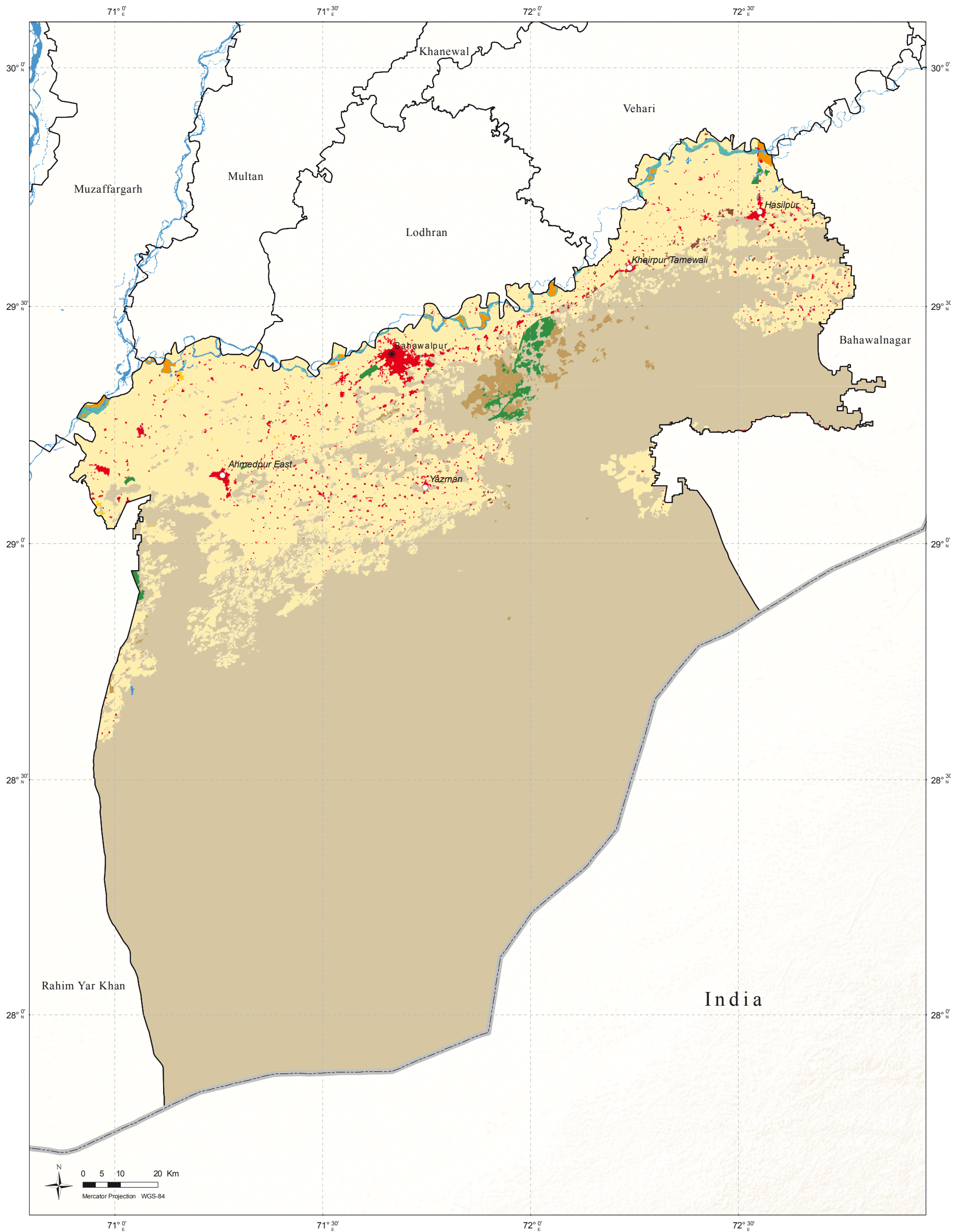
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	4.91	0.0
Crop Irrigated	5,120.94	21.4
Crop Marginal and Irrigated Saline	6.94	0.0
Crop in Flood Plain	39.13	0.2
Crop Rainfed	0.36	0.0
Forest - Natural Trees and Mangroves	104.93	0.4
Natural Vegetation in Wet Areas	54.91	0.2
Range Lands - Natural Shrubs and Herbs	169.55	0.7
Built-up	214.74	0.9
Bare Areas	24.85	0.1
Bare Areas with Sparse Natural Vegetation	18,146.30	75.8
Wet Areas	40.66	0.2
Snow and Glaciers	0.00	0.0
Grand Total	23,928.22	







BHAKKAR

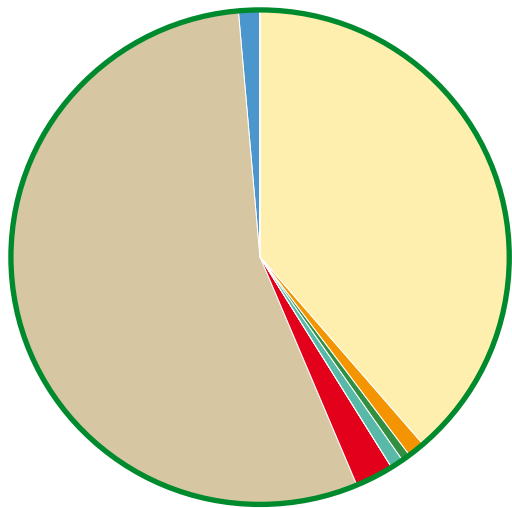
Bhakkar was established as a district in 1981. Most of the district area lies in the desolate plain of the Thal desert, though the fertile strip of riverine land along the Indus River is also present. It consists of riverine tract along the Indus River called Kacha and the Thal, historically called Chol-e-Jalali. Bhakkar has four tehsils: Bhakkar, Darya Khan, Kaloorkot and Mankera. Bhakkar is also the district headquarter.

INDEX MAP



Source: www.panoramio.com

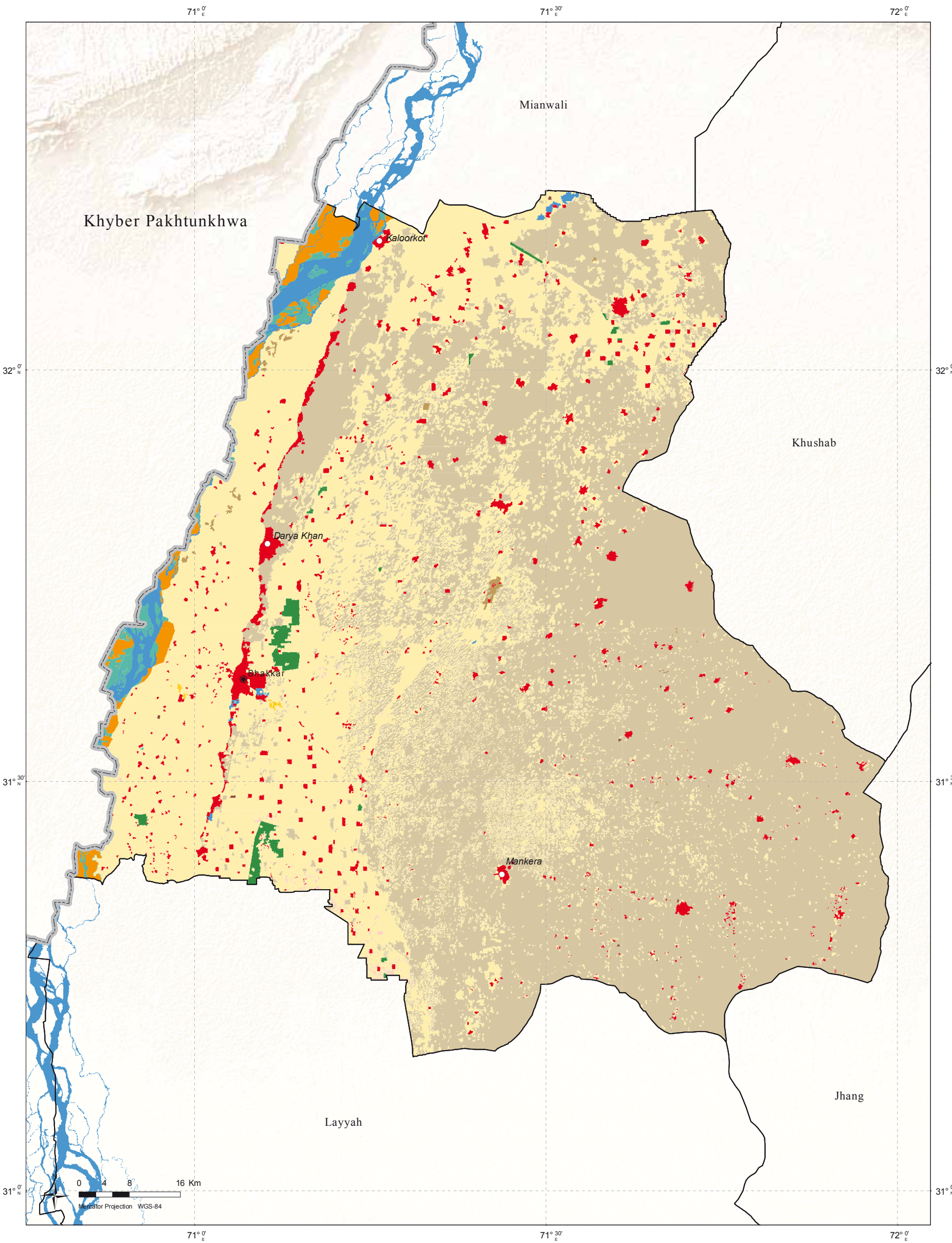
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	12.32	0.2
Crop Irrigated	3,144.30	38.5
Crop Marginal and Irrigated Saline	1.72	0.0
Crop in Flood Plain	101.98	1.2
Crop Rainfed	0.07	0.0
Forest - Natural Trees and Mangroves	41.13	0.5
Natural Vegetation in Wet Areas	64.28	0.8
Range Lands - Natural Shrubs and Herbs	12.05	0.1
Built-up	189.83	2.3
Bare Areas	1.38	0.0
Bare Areas with Sparse Natural Vegetation	4,483.61	54.9
Wet Areas	107.71	1.3
Snow and Glaciers	0.00	0.0
Grand Total	8,160.38	







CHAKWAL

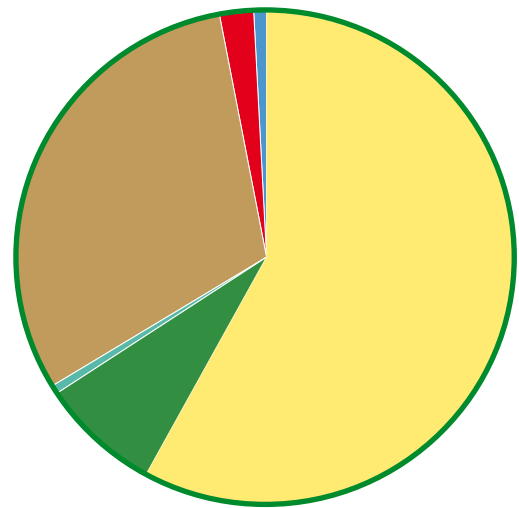
Chakwal district lies at the start of Potohar plateau and Salt Range. Rainfed agriculture is largely practiced in the district. The terrain is mainly hilly, covered with forest in the southwest, and leveled plains interspaced with dry rocky patches in the north and northeast. The southern portion runs up into the Salt Range and includes the Chail peak; the highest point in the district which is 1,128 meters above sea level. The district comprises four tehsils: Chakwal, Kallar Kahar, Choa Saidan Shah and Talagang. The district headquarter is located at Chakwal.

INDEX MAP



Source: www.panoramio.com

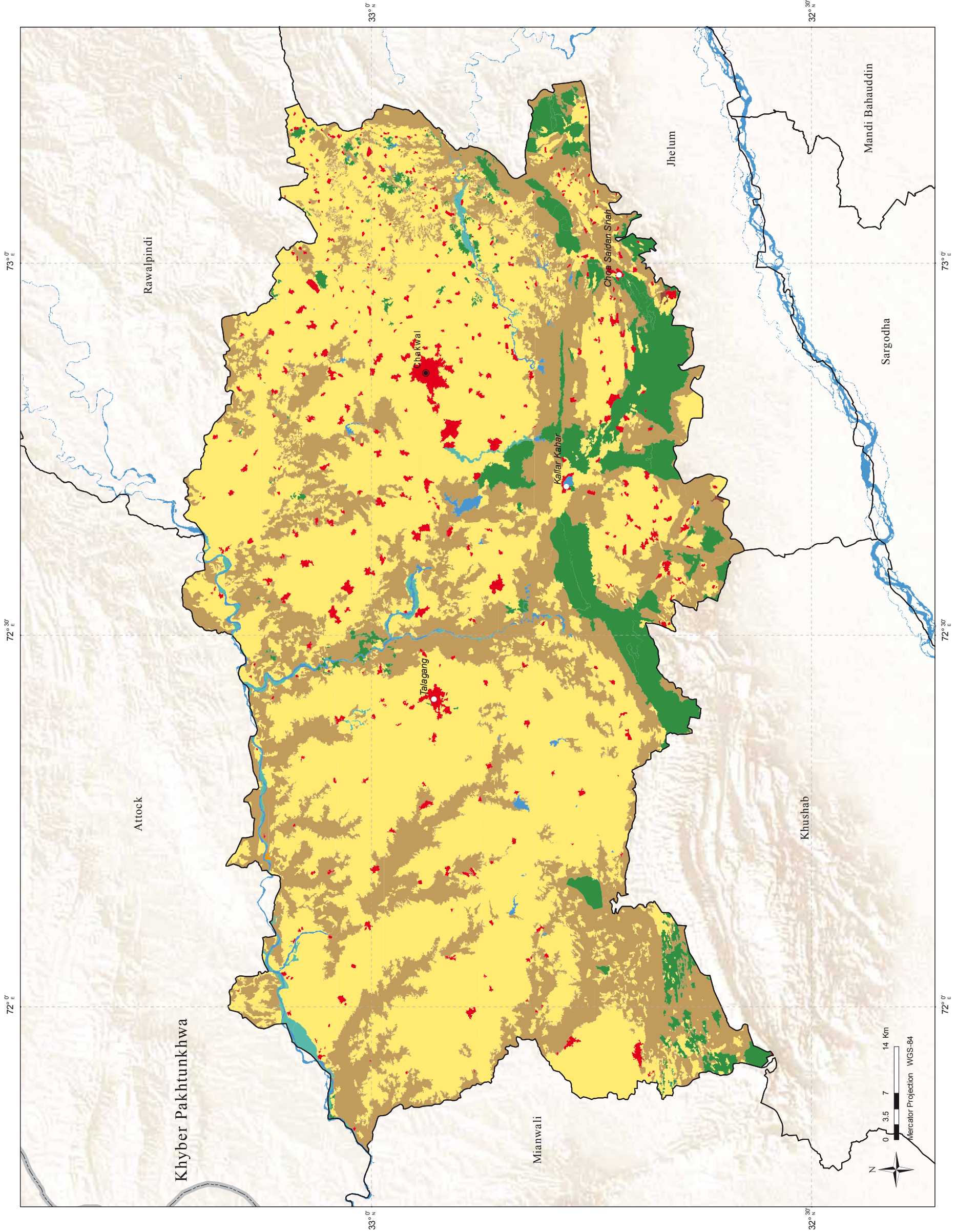
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km²	%
	Orchards	0.03	0.0
	Crop Irrigated	0.00	0.0
	Crop Marginal and Irrigated Saline	0.00	0.0
	Crop in Flood Plain	0.40	0.0
	Crop Rainfed	3,815.97	58.2
	Forest - Natural Trees and Mangroves	502.59	7.7
	Natural Vegetation in Wet Areas	47.76	0.7
	Range Lands - Natural Shrubs and Herbs	2,005.61	30.6
	Built-up	138.36	2.1
	Bare Areas	1.93	0.0
	Bare Areas with Sparse Natural Vegetation	0.00	0.0
	Wet Areas	43.20	0.7
	Snow and Glaciers	0.00	0.0
Grand Total		6,555.86	







CHINIOT

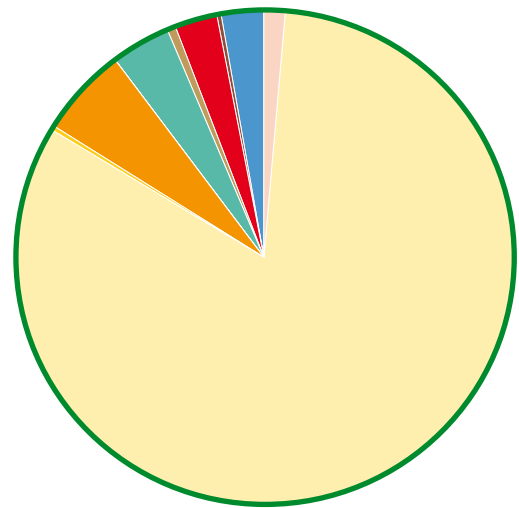
Chiniot district is located between the heart of river Chenab with the heads of small rocky hills. It is known for its wooden furniture architecture which is exported worldwide. It contains fertile soil, mostly utilized for large scale production of wheat, rice, barley, cotton, vegetables and fruits. The district has three tehsils: Chiniot, Bhowana and Lalian. The district headquarter is located at Chiniot.

INDEX MAP



Source: www.panoramio.com

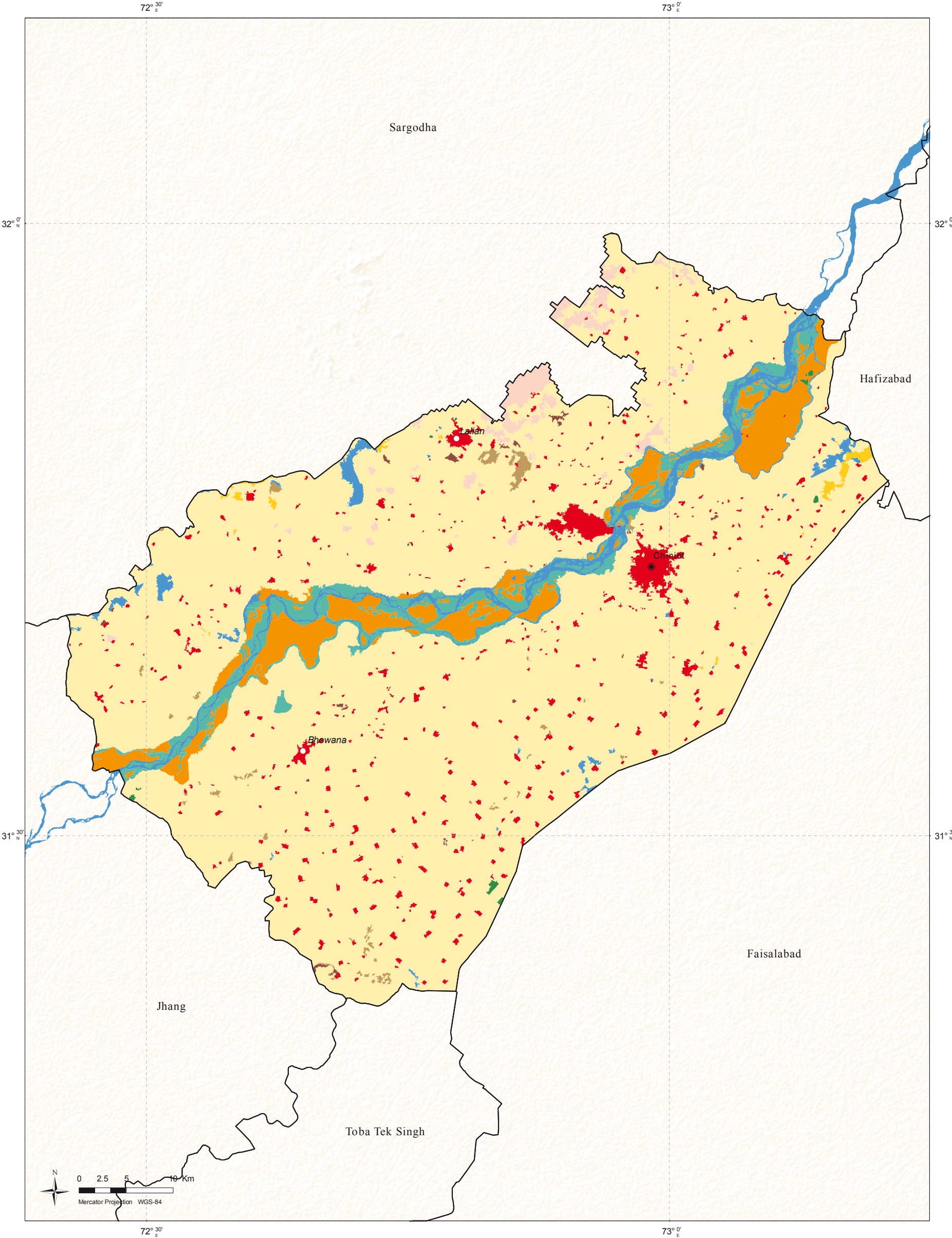
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	39.80	1.5
Crop Irrigated	2,187.52	82.3
Crop Marginal and Irrigated Saline	7.26	0.3
Crop in Flood Plain	150.64	5.7
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	1.94	0.1
Natural Vegetation in Wet Areas	104.97	3.9
Range Lands - Natural Shrubs and Herbs	11.47	0.4
Built-up	79.45	3.0
Bare Areas	3.61	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	72.60	2.7
Snow and Glaciers	0.00	0.0
Grand Total	2,659.25	







DERA GHAZI KHAN

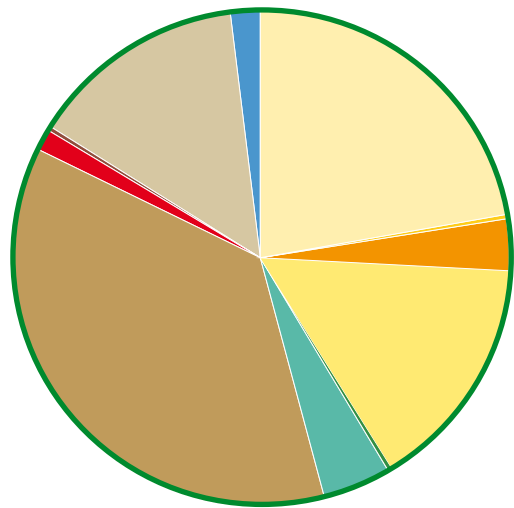
Dera Ghazi Khan district is situated at the foot hills of Sulaiman Mountain Range. Below the hills the country is high and arid, generally level, but sometimes rolling in sandy undulations and intersected by hill torrents. It also includes a hill station, located at a height of 1,972 meters above sea level, Fort Munro. The district comprises three tehsils: Dera Ghazi Khan, Taunsa and Fort Munro. The district headquarter is located at Dera Ghazi Khan.

INDEX MAP



Source: www.panoramio.com

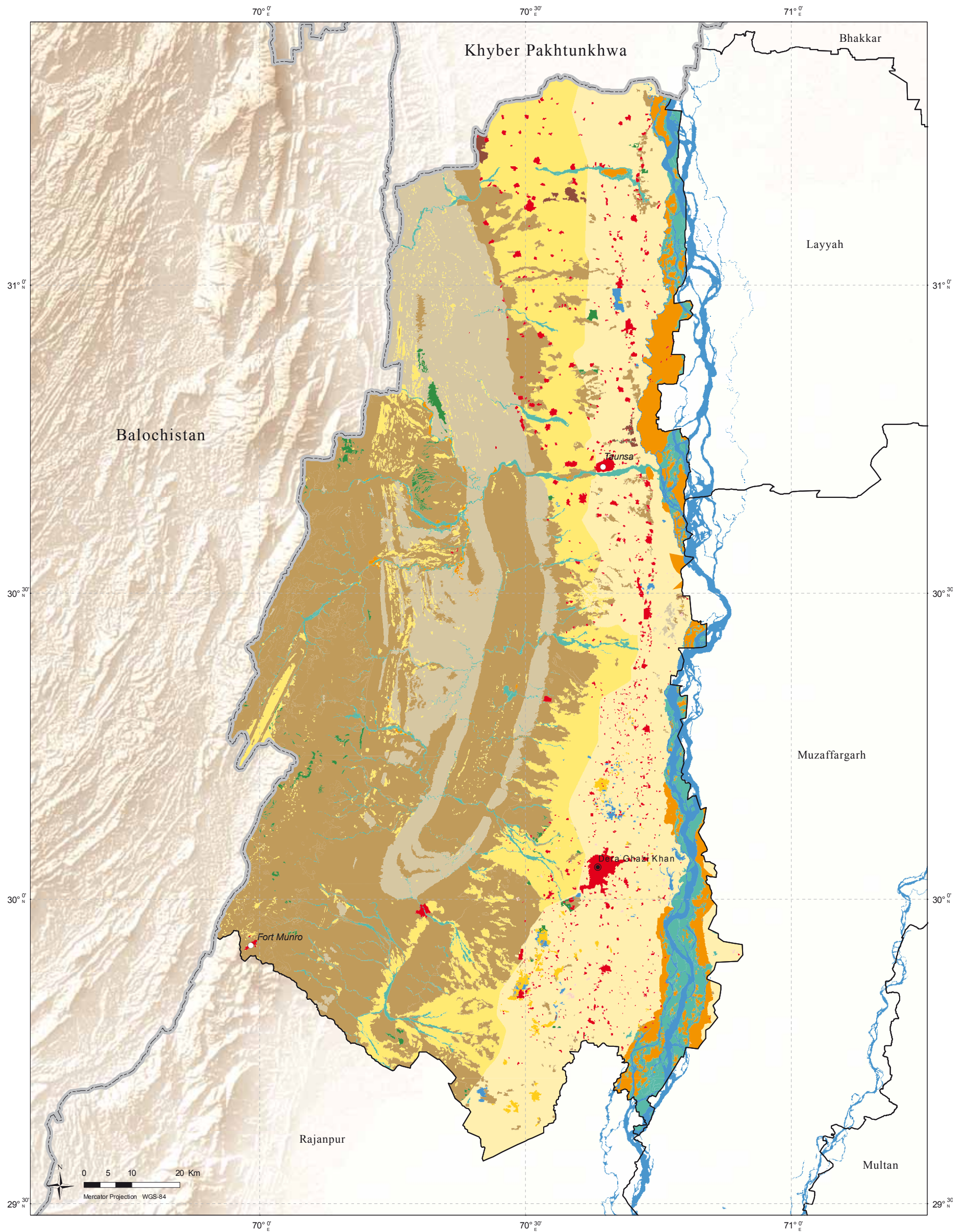
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	5.70	0.0
Crop Irrigated	2,680.05	22.4
Crop Marginal and Irrigated Saline	39.59	0.3
Crop in Flood Plain	382.43	3.2
Crop Rainfed	1,812.28	15.2
Forest - Natural Trees and Mangroves	55.13	0.5
Natural Vegetation in Wet Areas	531.34	4.4
Range Lands - Natural Shrubs and Herbs	4,341.82	36.3
Built-up	164.89	1.4
Bare Areas	23.99	0.2
Bare Areas with Sparse Natural Vegetation	1,685.11	14.1
Wet Areas	224.47	1.9
Snow and Glaciers	0.00	0.0
Grand Total	11,946.80	







FAISALABAD

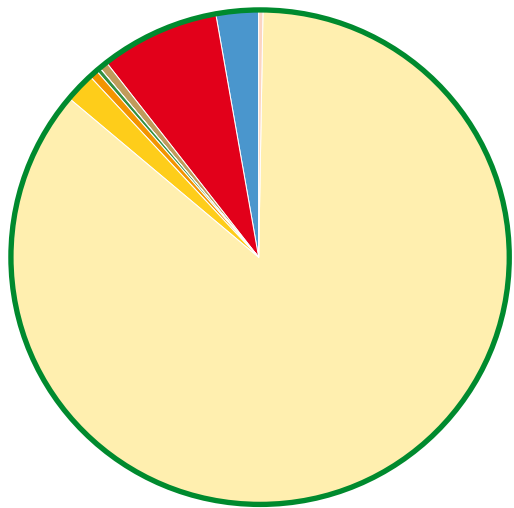
Faisalabad, the 3rd largest city of Pakistan, is situated in central Punjab. Faisalabad district is the home to numerous textile, sugar and flour mills. Irrigated area productions consist of cotton, wheat, sugarcane, vegetables and fruits. The district comprises of six tehsils: Faisalabad City, Faisalabad Saddar, Jaranwala, Jhumra, Samundri and Tandlianwala. The district headquarter is situated at Faisalabad.

INDEX MAP



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

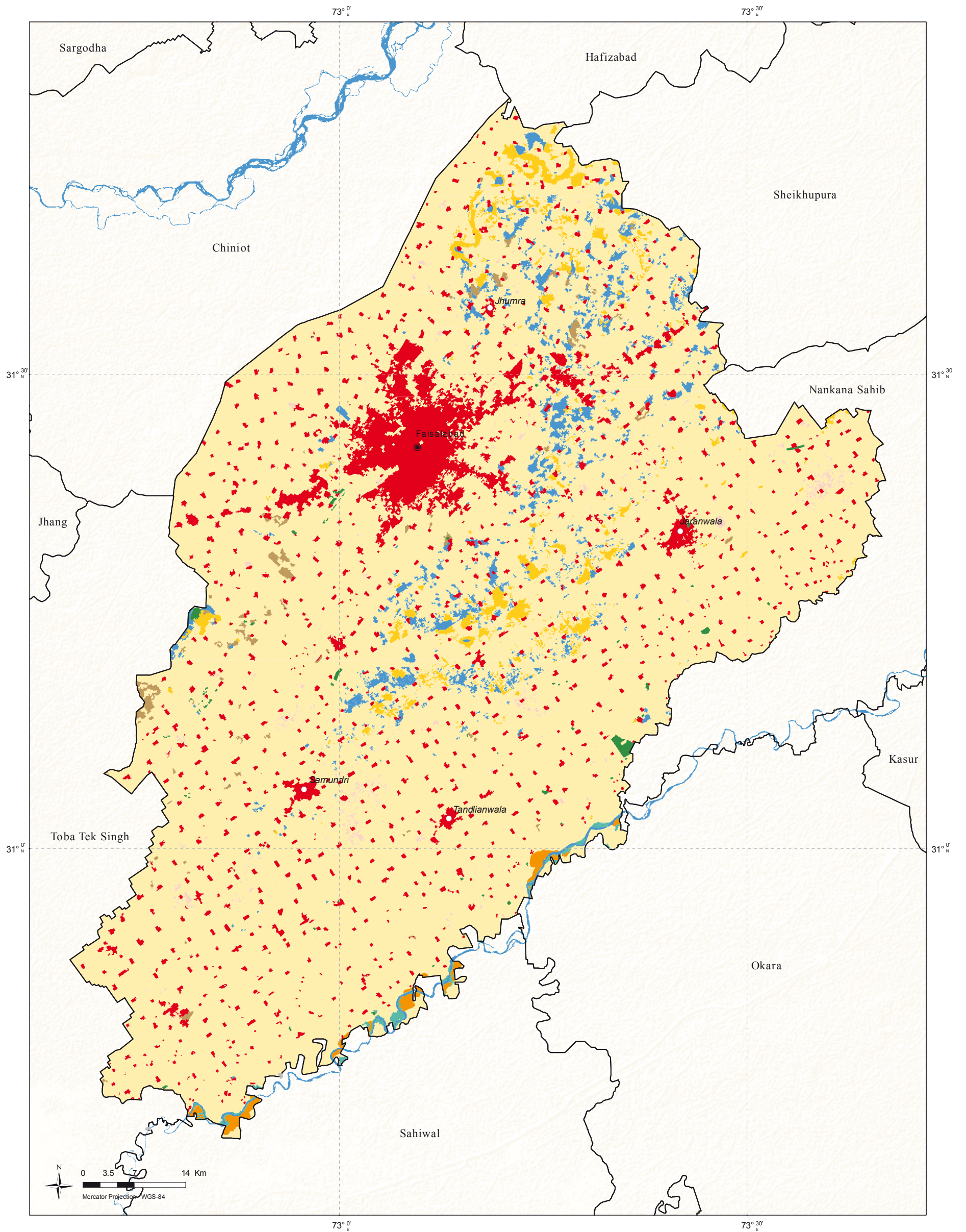
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km <sup>2</sup>	%
	Orchards	30.14	0.5
	Crop Irrigated	5,023.01	85.8
	Crop Marginal and Irrigated Saline	119.88	2.0
	Crop in Flood Plain	20.60	0.4
	Crop Rainfed	0.00	0.0
	Forest - Natural Trees and Mangroves	11.43	0.2
	Natural Vegetation in Wet Areas	12.73	0.2
	Range Lands - Natural Shrubs and Herbs	31.09	0.5
	Built-up	454.01	7.8
	Bare Areas	0.21	0.0
	Bare Areas with Sparse Natural Vegetation	0.00	0.0
	Wet Areas	154.51	2.6
	Snow and Glaciers	0.00	0.0
Grand Total		5,857.61	







GUJRANWALA

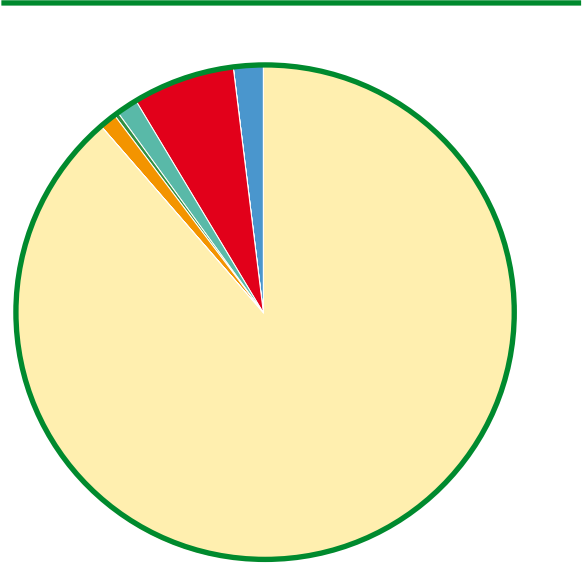
Gujranwala district lies on Grand Trunk (GT) road which was built by Emperor Sher Shah Suri in the 16th century. The district comprises of several commercial and industrial centers for the manufacturing of ceramics, metal tools, leather, utensils, fans, textiles etc. The district consists of four tehsils: Gujranwala, Kamoke, Nowshera Virkan and Wazirabad. The district headquarter is situated at Gujranwala.

INDEX MAP



Source: Wikipedia

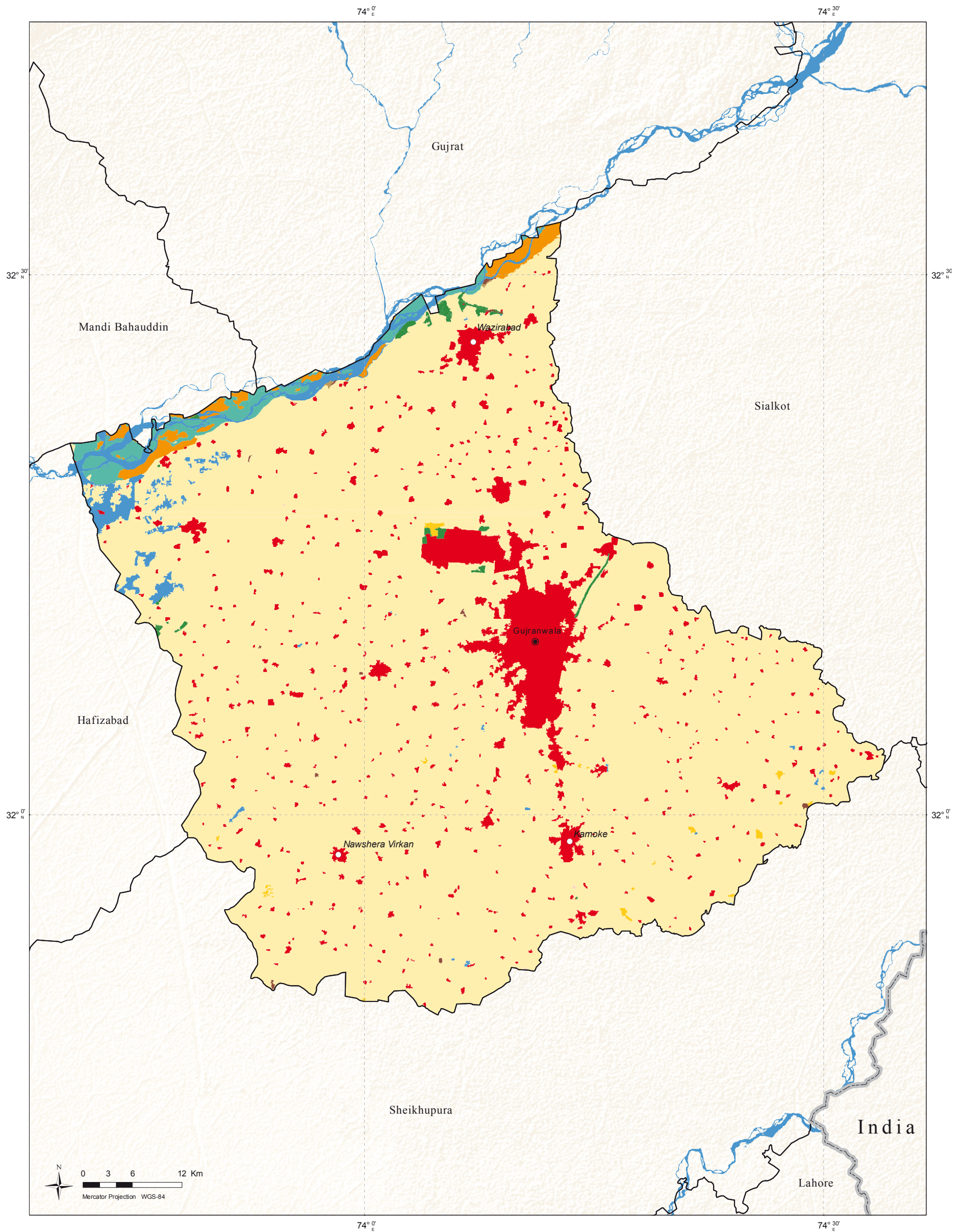
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km²	%
	Orchards	0.15	0.0
	Crop Irrigated	3,225.17	88.7
	Crop Marginal and Irrigated Saline	5.64	0.2
	Crop in Flood Plain	35.14	1.0
	Crop Rainfed	0.00	0.0
	Forest - Natural Trees and Mangroves	12.18	0.3
	Natural Vegetation in Wet Areas	47.52	1.3
	Range Lands - Natural Shrubs and Herbs	0.53	0.0
	Built-up	246.35	6.8
	Bare Areas	2.04	0.1
	Bare Areas with Sparse Natural Vegetation	0.00	0.0
	Wet Areas	62.75	1.7
	Snow and Glaciers	0.00	0.0
Grand Total		3,637.46	







GUJRAT

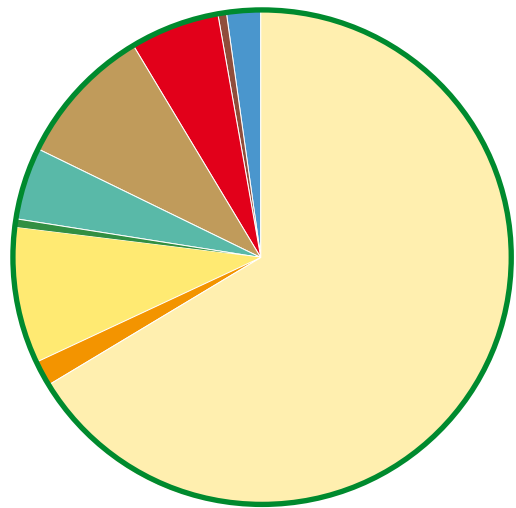
Gujrat is an ancient district located between two famous rivers, the Jhelum and Chenab. Due to its proximity with the rivers, the land is good for cultivation of rice and sugar cane as the main crops. The district comprises of three tehsils: Gujrat, Kharian, and Sarai Alamgir. The district headquarter is situated at Gujrat.

INDEX MAP



Source: www.panoramio.com

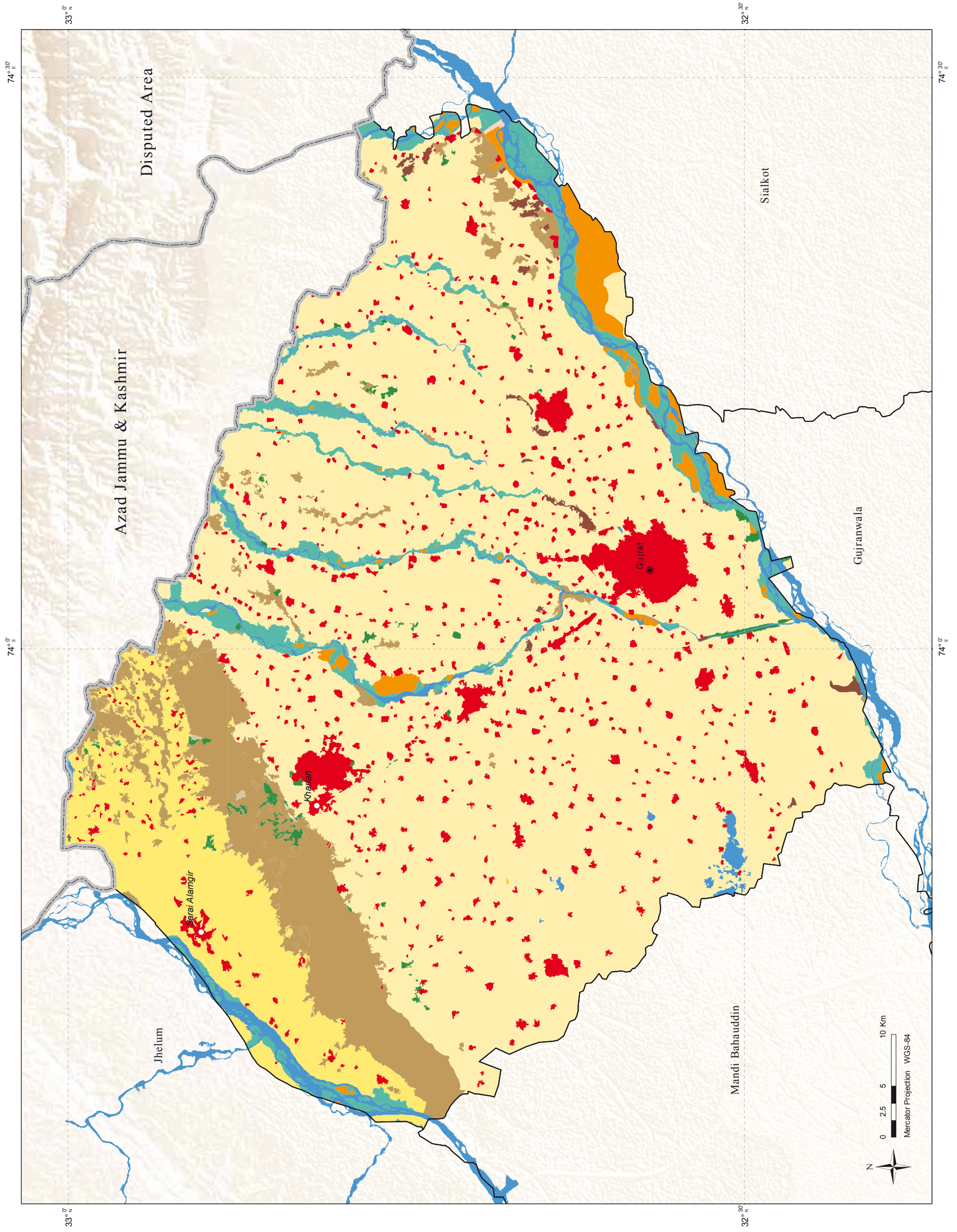
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	0.83	0.0
Crop Irrigated	2,134.21	66.5
Crop Marginal and Irrigated Saline	0.09	0.0
Crop in Flood Plain	58.31	1.8
Crop Rainfed	283.65	8.8
Forest - Natural Trees and Mangroves	16.29	0.5
Natural Vegetation in Wet Areas	150.19	4.7
Range Lands - Natural Shrubs and Herbs	294.68	9.2
Built-up	188.09	5.9
Bare Areas	12.54	0.4
Bare Areas with Sparse Natural Vegetation	0.80	0.0
Wet Areas	71.09	2.2
Snow and Glaciers	0.00	0.0
Grand Total	3,210.76	







HAFIZABAD

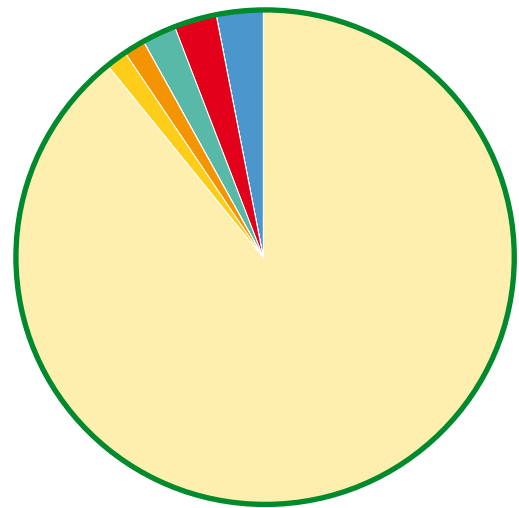
Hafizabad district is famous for rice production. The climate of the district is hot and dry during summer and moderately cold in the winter. Owing to its proximity to hilly terrain, there is more rainfall in the east than the west. Hafizabad district comprises of two tehsils: Hafizabad and Pindi Bhattian. The district headquarter is situated at Hafizabad.

INDEX MAP



Source: Wikipedia

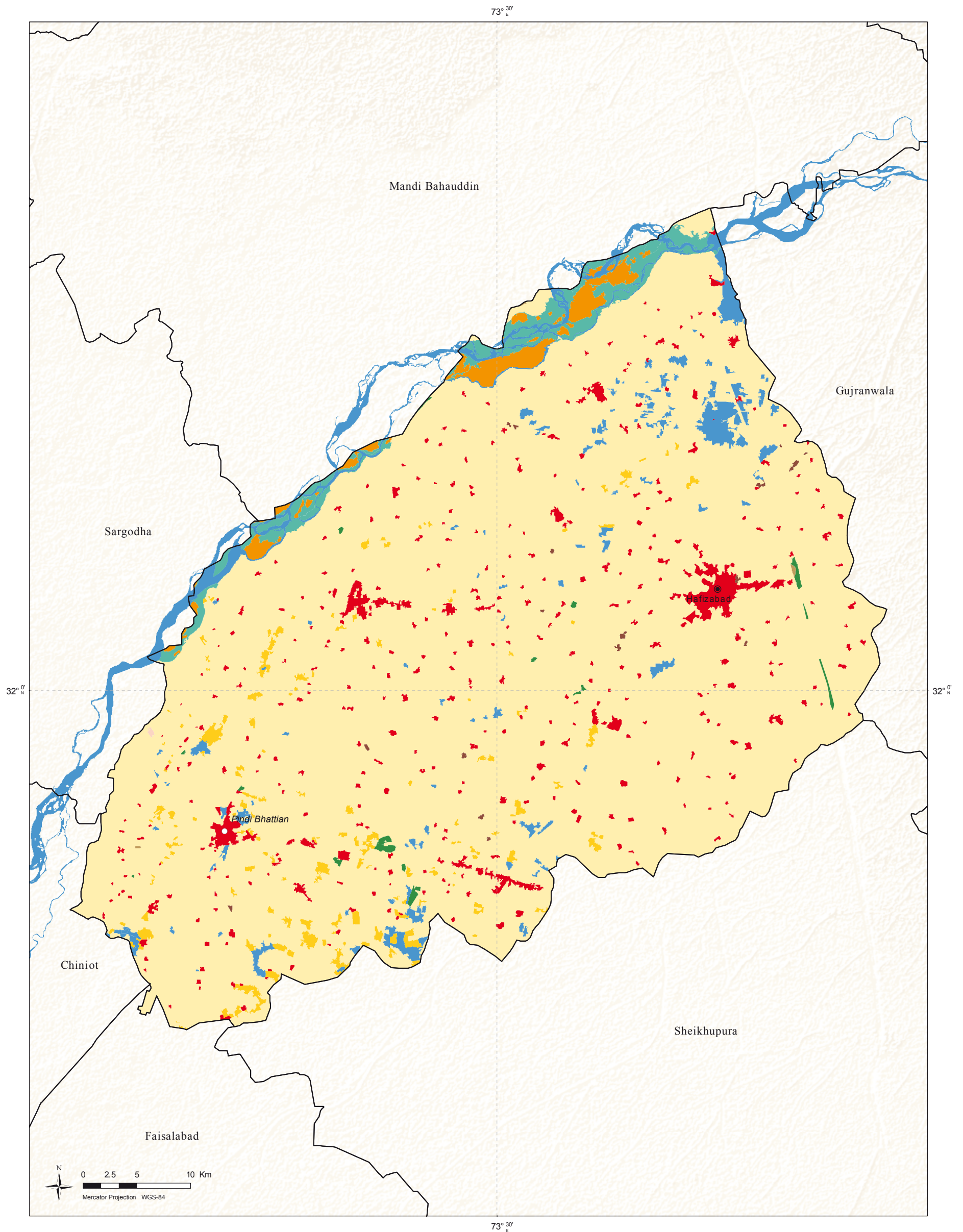
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.23	0.0
Crop Irrigated	2,105.40	89.2
Crop Marginal and Irrigated Saline	35.30	1.5
Crop in Flood Plain	29.55	1.3
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	5.20	0.2
Natural Vegetation in Wet Areas	50.56	2.1
Range Lands - Natural Shrubs and Herbs	0.36	0.0
Built-up	66.29	2.8
Bare Areas	1.93	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	65.54	2.8
Snow and Glaciers	0.00	0.0
Grand Total	2,360.37	







JHANG

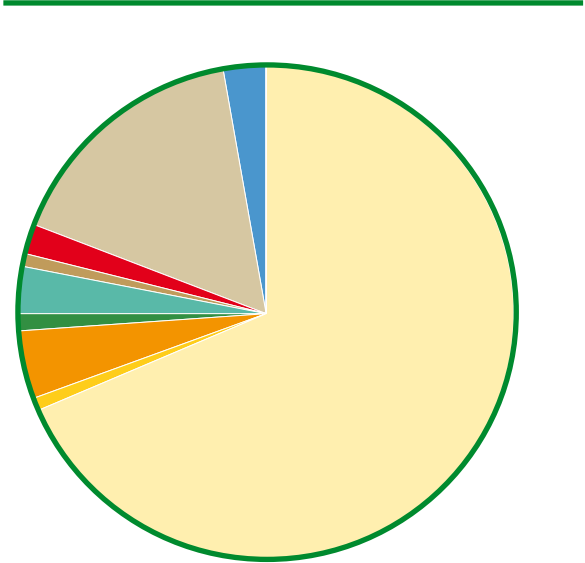
Jhang is one of the oldest districts and is situated in central Punjab. Almost all of the area is cultivatable except in the north near Chenab Nagar where the land turns rocky as it approaches the Kirana hills. Jhang district comprises of three tehsils: Jhang, Shorkot and Ahmadpur Sial. The district headquarter is situated at Jhang.

INDEX MAP



Source: www.panoramio.com

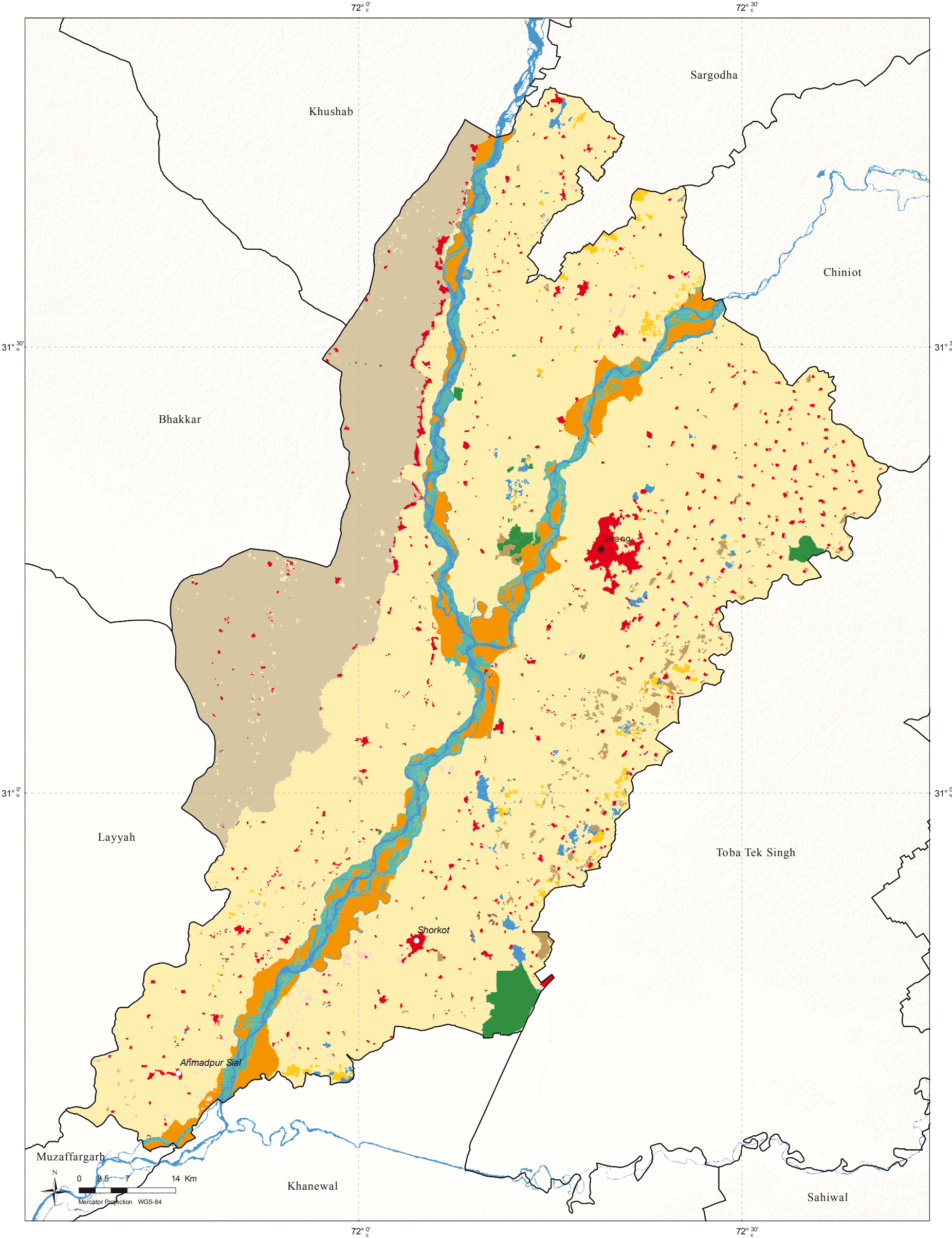
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	15.42	0.2
Crop Irrigated	4,235.85	68.5
Crop Marginal and Irrigated Saline	41.69	0.7
Crop in Flood Plain	285.15	4.6
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	61.95	1.0
Natural Vegetation in Wet Areas	188.77	3.1
Range Lands - Natural Shrubs and Herbs	49.90	0.8
Built-up	132.72	2.1
Bare Areas	2.32	0.0
Bare Areas with Sparse Natural Vegetation	1,014.69	16.4
Wet Areas	153.68	2.5
Snow and Glaciers	0.00	0.0
Grand Total	6,182.15	







JHELUM

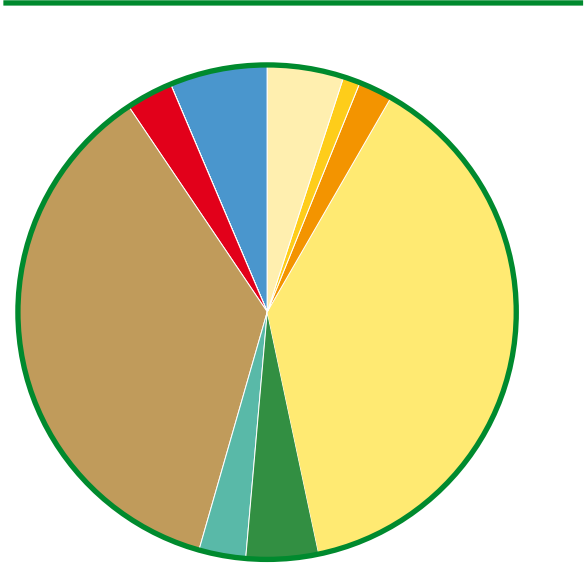
Jhelum district is situated in the north east of Punjab. The river Jhelum passes through the eastern and southern parts of the district. The soil adjoining the river is generally plain, alluvial and quite fertile. This area is generally cultivatable and produces all types of crops. However, in the north, most of the upland is rough and broken. It contains one of the largest salt mines in the world, Khwera salt mines. It also has the famous historical Rohtas Fort. The district contains four tehsils: Jhelum, Sohawa, Pind Dadan Khan and Dina. The district headquarter is situated at Jhelum.

INDEX MAP



Source: Wikipedia

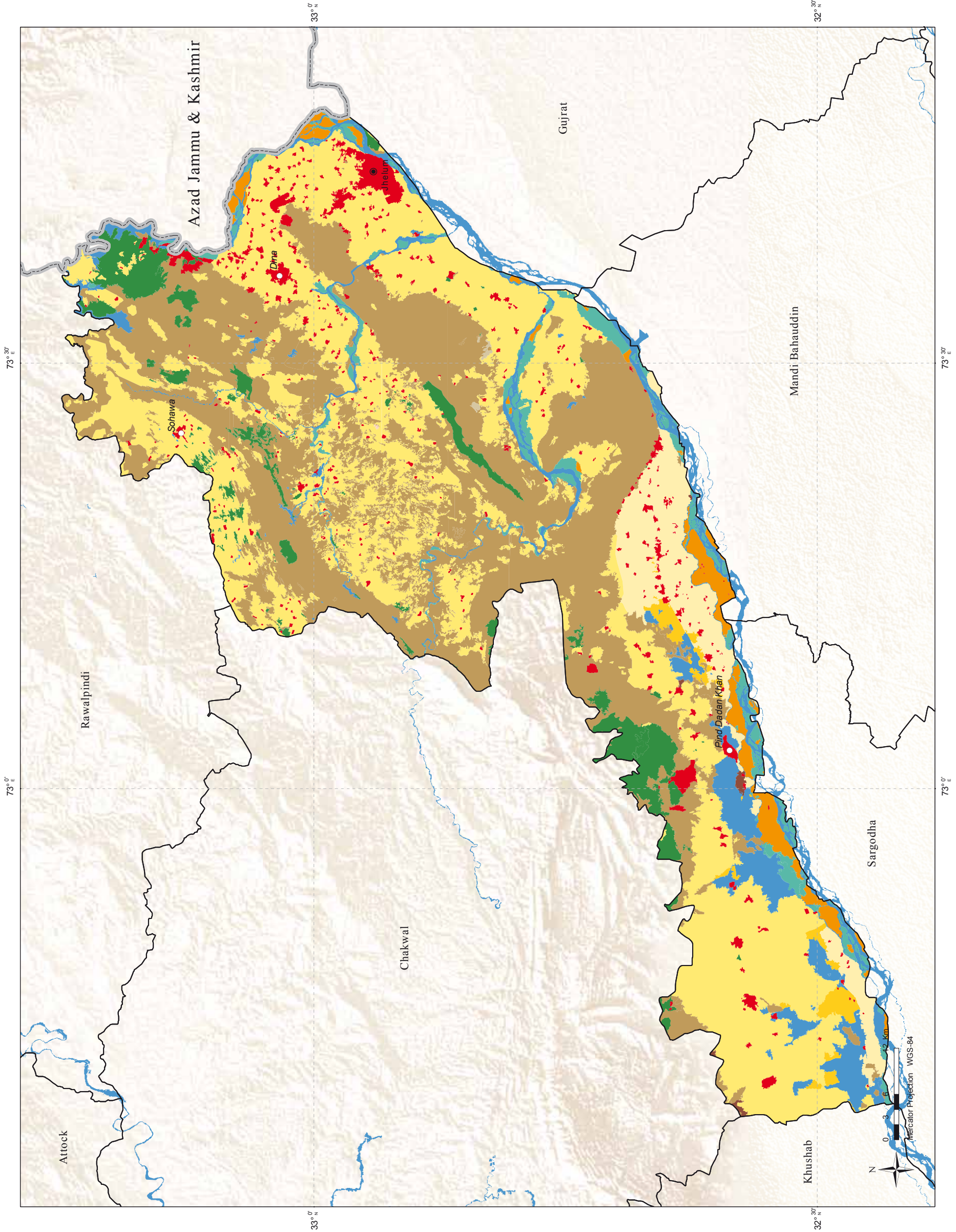
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.19	0.0
Crop Irrigated	188.92	5.2
Crop Marginal and Irrigated Saline	37.09	1.0
Crop in Flood Plain	83.78	2.3
Crop Rainfed	1,386.69	38.2
Forest - Natural Trees and Mangroves	169.40	4.7
Natural Vegetation in Wet Areas	108.17	3.0
Range Lands - Natural Shrubs and Herbs	1,317.20	36.3
Built-up	104.64	2.9
Bare Areas	3.97	0.1
Bare Areas with Sparse Natural Vegetation	1.79	0.0
Wet Areas	224.88	6.2
Snow and Glaciers	0.00	0.0
Grand Total	3,626.72	







KASUR

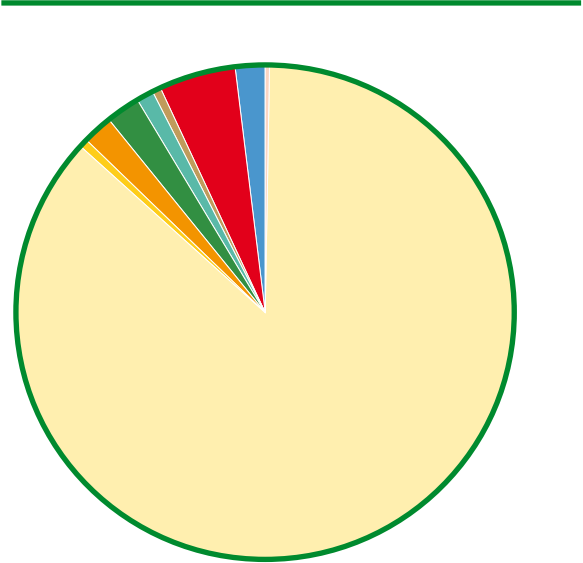
Kasur district is bordered by the Lahore district in the north and Sutlej river in the south east. The district contains four tehsils: Kasur, Chunian, Kot Radha Kishan and Pattoki. Kasur is the birth city of the famous sufi poet Baba Bulleh Shah. The district headquarter is situated at Kasur.

INDEX MAP



Source: SUPARCO

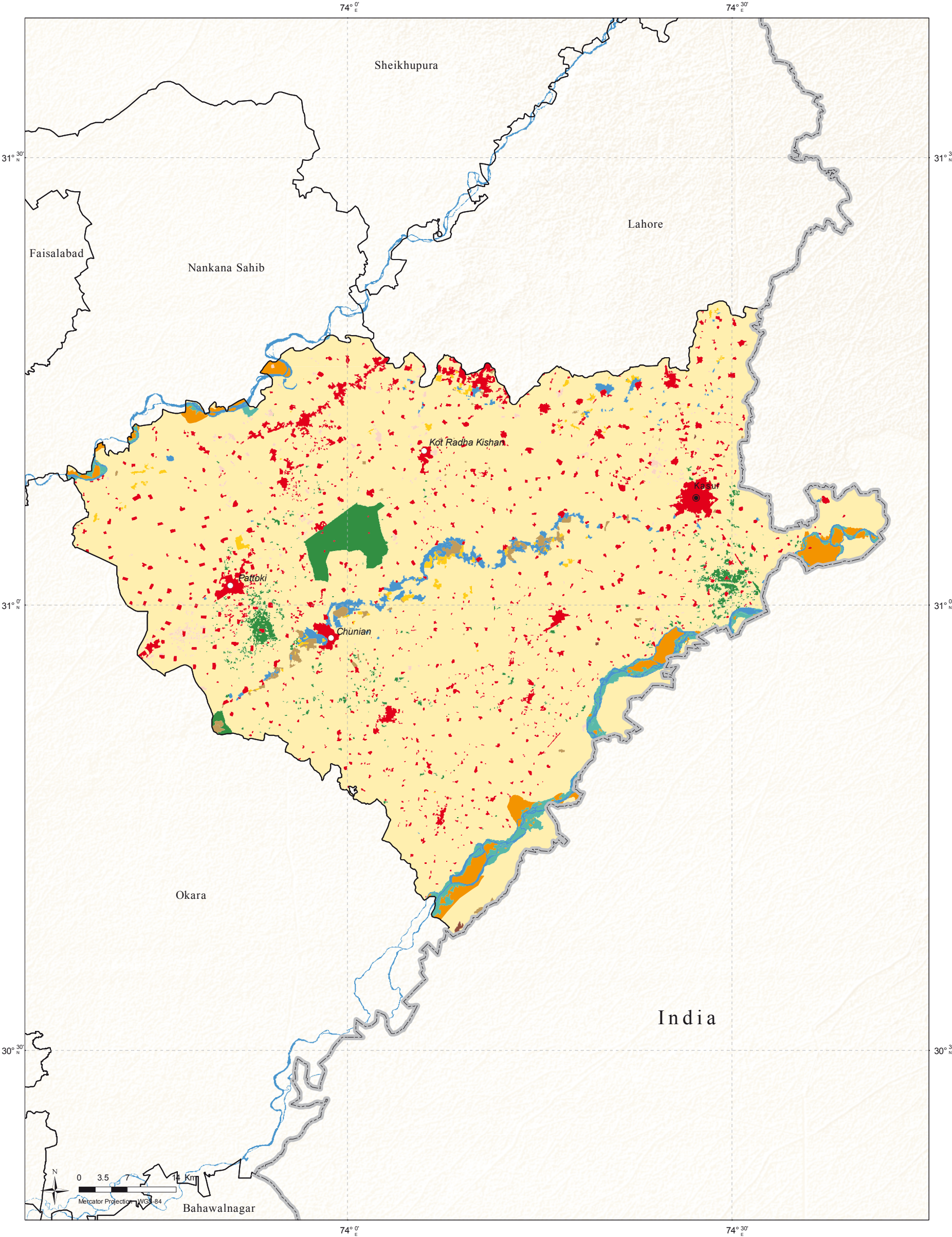
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	19.49	0.5
Crop Irrigated	3,463.89	86.4
Crop Marginal and Irrigated Saline	20.02	0.5
Crop in Flood Plain	70.70	1.8
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	92.97	2.3
Natural Vegetation in Wet Areas	48.74	1.2
Range Lands - Natural Shrubs and Herbs	23.96	0.6
Built-up	191.01	4.8
Bare Areas	1.29	0.0
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	77.79	1.9
Snow and Glaciers	0.00	0.0
Grand Total	4,009.85	







KHANEWAL

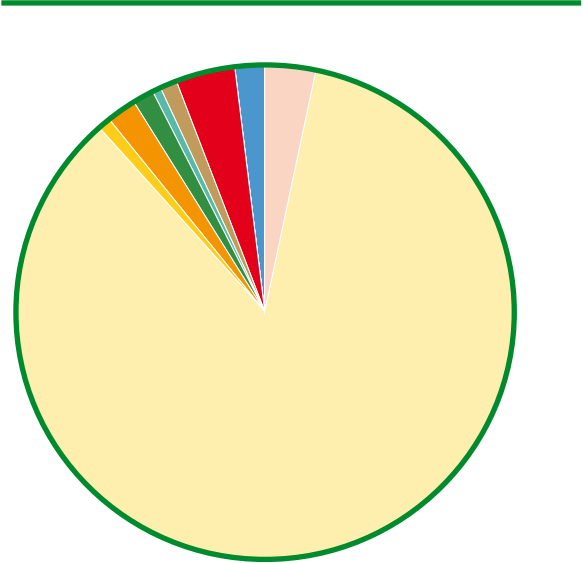
Khanewal district was created in 1985 by combining two tehsils of Multan district. It has the second largest railway station in the country, the Khanewal Junction. Climate of the district is hot and dry. Summer season starts in April and continues till October. May, June and July are the hottest months. The district comprises of four tehsils: Khanewal, Jahanian, Kabirwala and Mian Channu. The district headquarter is situated at Khanewal.

INDEX MAP



Source: www.panoramio.com

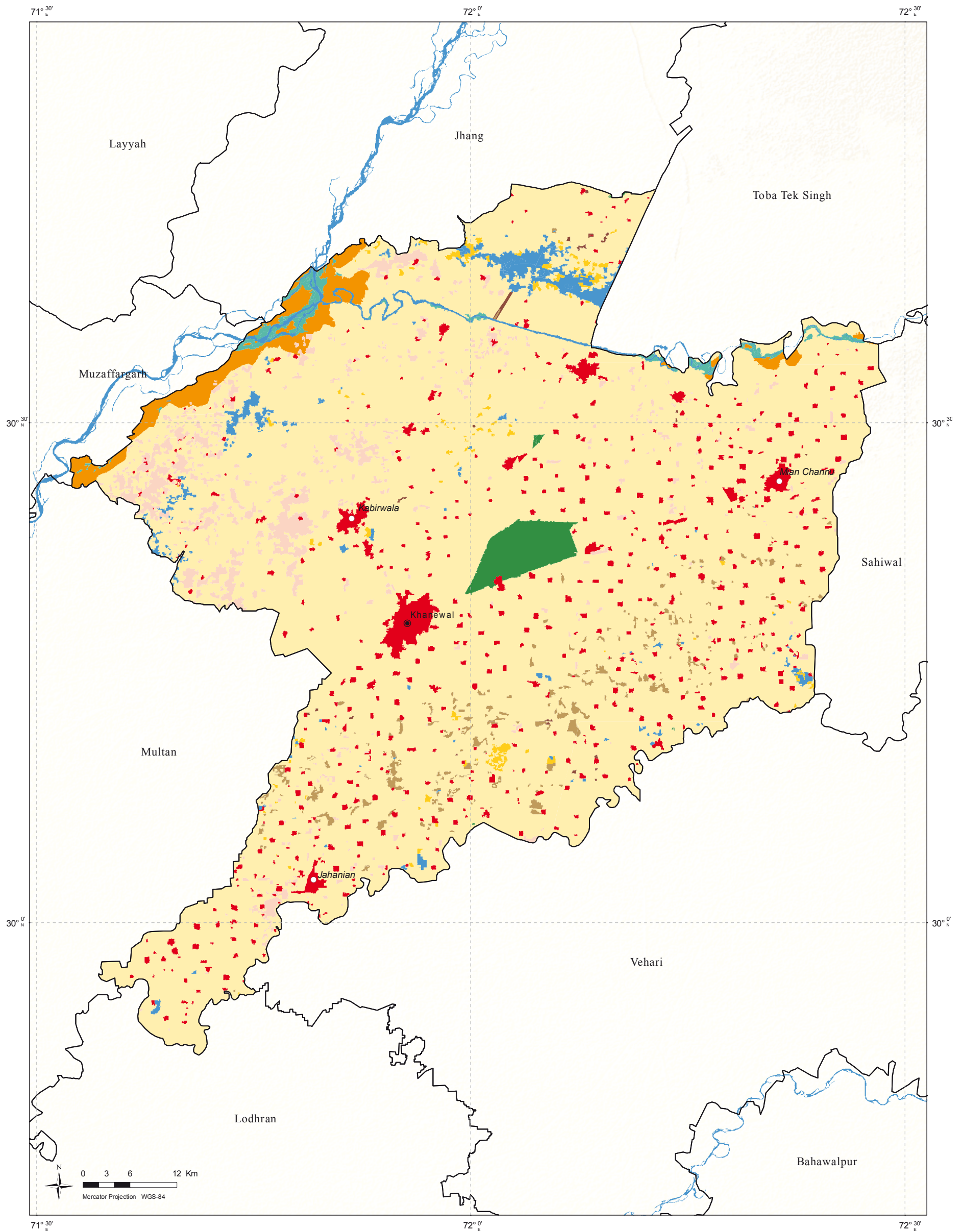
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	155.41	3.6
Crop Irrigated	3,644.06	84.9
Crop Marginal and Irrigated Saline	25.05	0.6
Crop in Flood Plain	91.49	2.1
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	56.25	1.3
Natural Vegetation in Wet Areas	28.64	0.7
Range Lands - Natural Shrubs and Herbs	44.55	1.0
Built-up	162.40	3.8
Bare Areas	3.40	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	79.15	1.8
Snow and Glaciers	0.00	0.0
Grand Total	4,290.41	







KHUSHAB

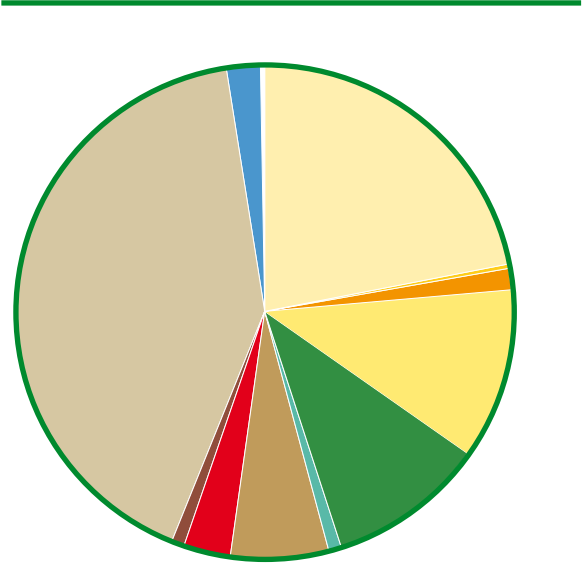
Khushab is quite a unique district of Pakistan as it has mountains, deserts, lush green harvesting land, lakes and rivers. The SOON valley, Sakasir, is one of the most beautiful hill stations of Pakistan. The Thal desert is a dry desert with scarce vegetation and mostly thorny bushes. Khushab district is quite rich in natural resources like salt and coal. Khushab district is a rural tribal district with its headquarter at Jauharabad. The district comprises of three tehsils: Khushab, Quaidabad and Noorpur.

INDEX MAP



Source: www.panoramio.com

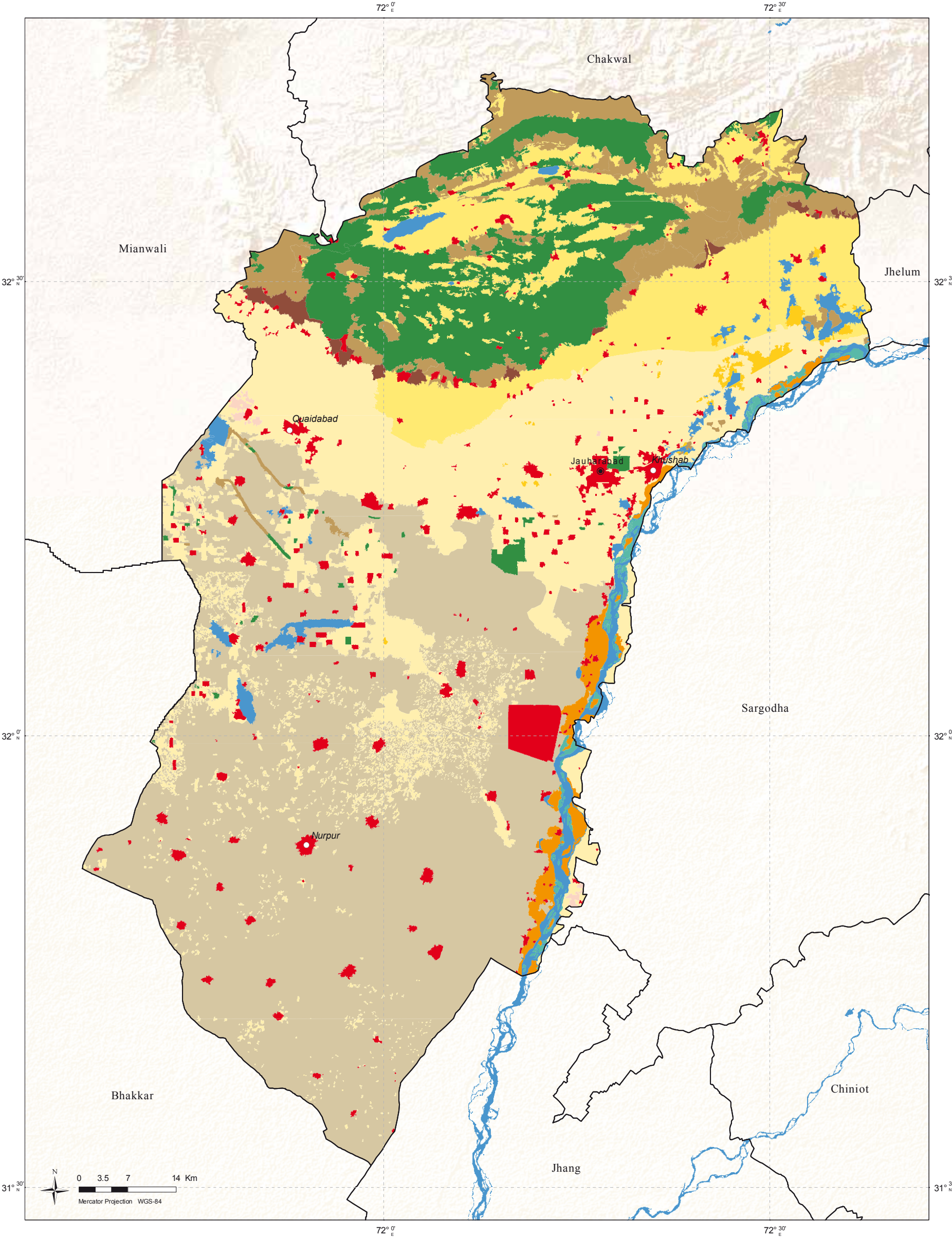
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	8.75	0.1
Crop Irrigated	1,440.96	22.0
Crop Marginal and Irrigated Saline	28.06	0.4
Crop in Flood Plain	83.56	1.3
Crop Rainfed	722.89	11.0
Forest - Natural Trees and Mangroves	685.44	10.5
Natural Vegetation in Wet Areas	39.63	0.6
Range Lands - Natural Shrubs and Herbs	429.67	6.6
Built-up	205.24	3.1
Bare Areas	36.67	0.6
Bare Areas with Sparse Natural Vegetation	2,725.68	41.6
Wet Areas	149.68	2.3
Snow and Glaciers	0.00	0.0
Grand Total	6,556.22	







LAHORE

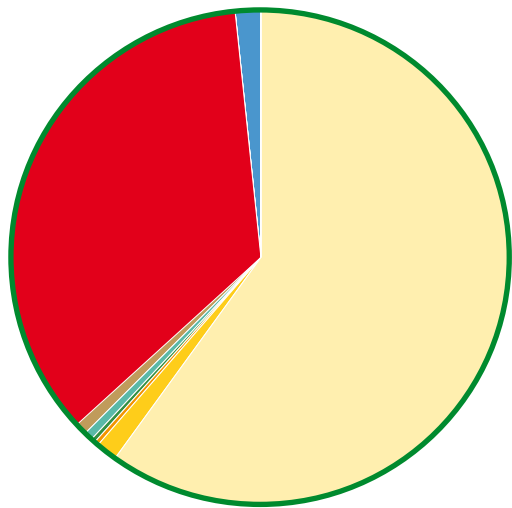
Lahore is the largest district of Punjab province comprising ninety percent urban population. Lahore is the 2nd largest city of Pakistan and the provincial capital as well, with Ravi river flowing on its northern side. The city has historical landmarks such as Badshahi Mosque, Lahore Fort and Shalimar Garden. Lahore is referred to as the cultural heart of Pakistan and hosts most of the arts, cuisine, festivals, film-making, music, gardening and intelligentsia of the country.

INDEX MAP



Source: [www.timesofpakistan.pk](http://www.timesofpakistan.pk)

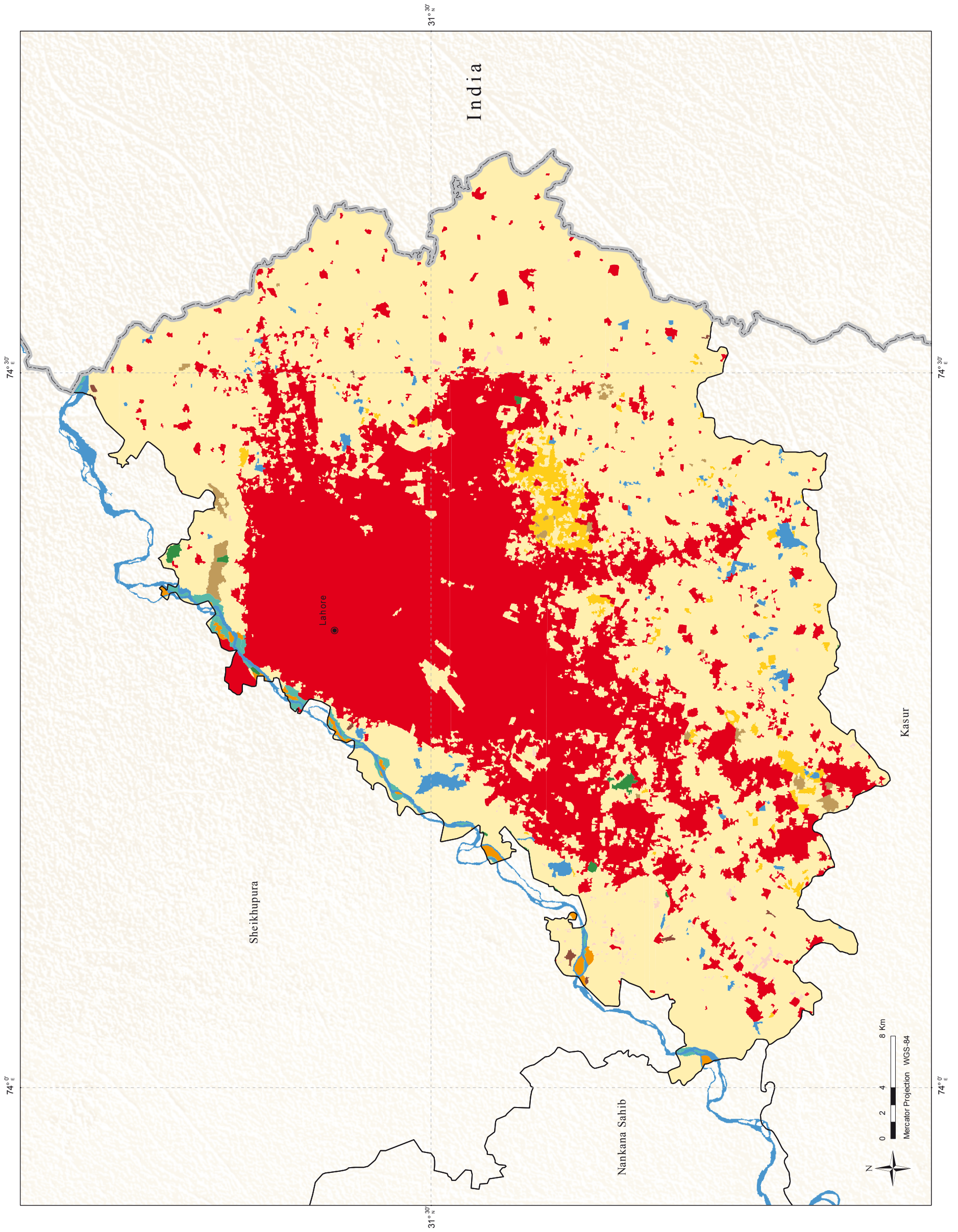
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	4.02	0.2
Crop Irrigated	1,048.33	59.9
Crop Marginal and Irrigated Saline	28.16	1.6
Crop in Flood Plain	4.70	0.3
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	3.35	0.2
Natural Vegetation in Wet Areas	7.49	0.4
Range Lands - Natural Shrubs and Herbs	8.50	0.5
Built-up	621.06	35.5
Bare Areas	1.36	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	23.79	1.4
Snow and Glaciers	0.00	0.0
Grand Total	1,750.77	







LAYYAH

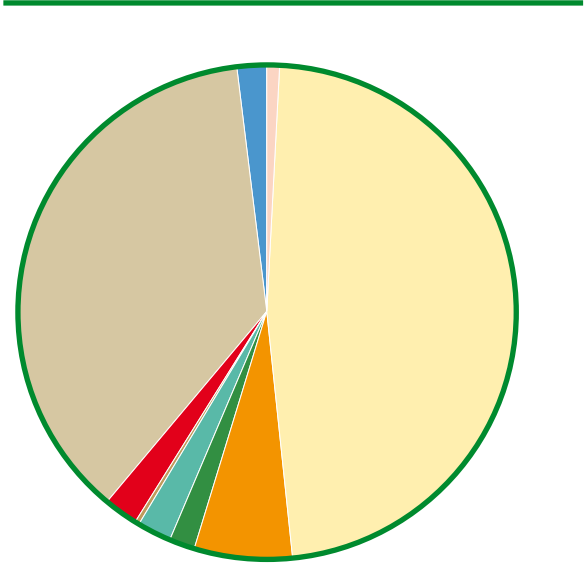
Layyah district is located in the southern part of Punjab. It was founded by a Mirani Baloch, Kamal Khan, around the year 1550. Sugarcane, Wheat, Cotton, Gram and Guar seed are the main crops of Layyah. The district comprises of three tehsils: Layyah, Chaubara and Karor Lal Esan. The district headquarter is at Layyah.

INDEX MAP



Source: www.panoramio.com

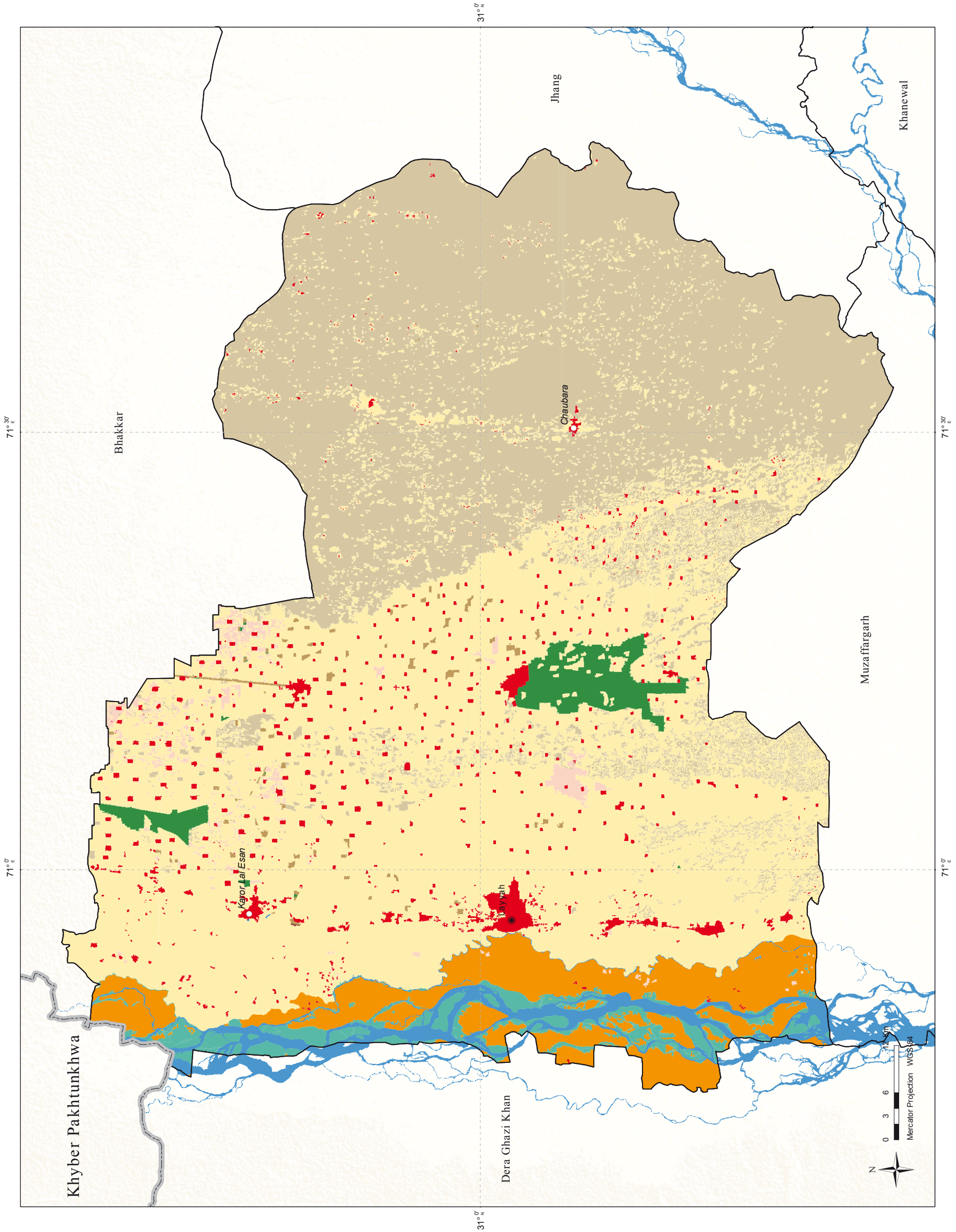
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	59.18	0.9
Crop Irrigated	2,980.43	47.5
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	398.01	6.3
Crop Rainfed	0.01	0.0
Forest - Natural Trees and Mangroves	111.04	1.8
Natural Vegetation in Wet Areas	145.28	2.3
Range Lands - Natural Shrubs and Herbs	21.35	0.3
Built-up	124.93	2.0
Bare Areas	0.31	0.0
Bare Areas with Sparse Natural Vegetation	2,312.78	36.9
Wet Areas	117.70	1.9
Snow and Glaciers	0.00	0.0
Grand Total	6,271.01	







LODHHRAN

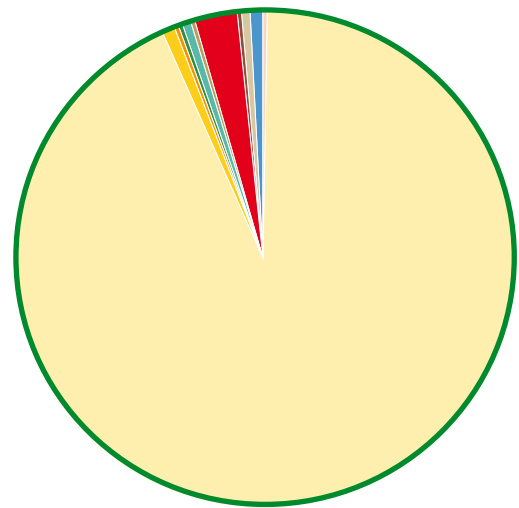
Lodhran district is located on the northern side of river Sutlej. The entire district is situated on a smooth plain. The sub-soil water in Duniyapur area is brackish while that in Kahrora Pakka and Lodhran is sweet. The climate of the district is hot and dry during summer and cold during the winter. Lodhran district comprises of three tehsils: Lodhran, Kahrora Pakka and Duniyapur. The district headquarter is located at Lodhran.

INDEX MAP



Source: www.panoramio.com

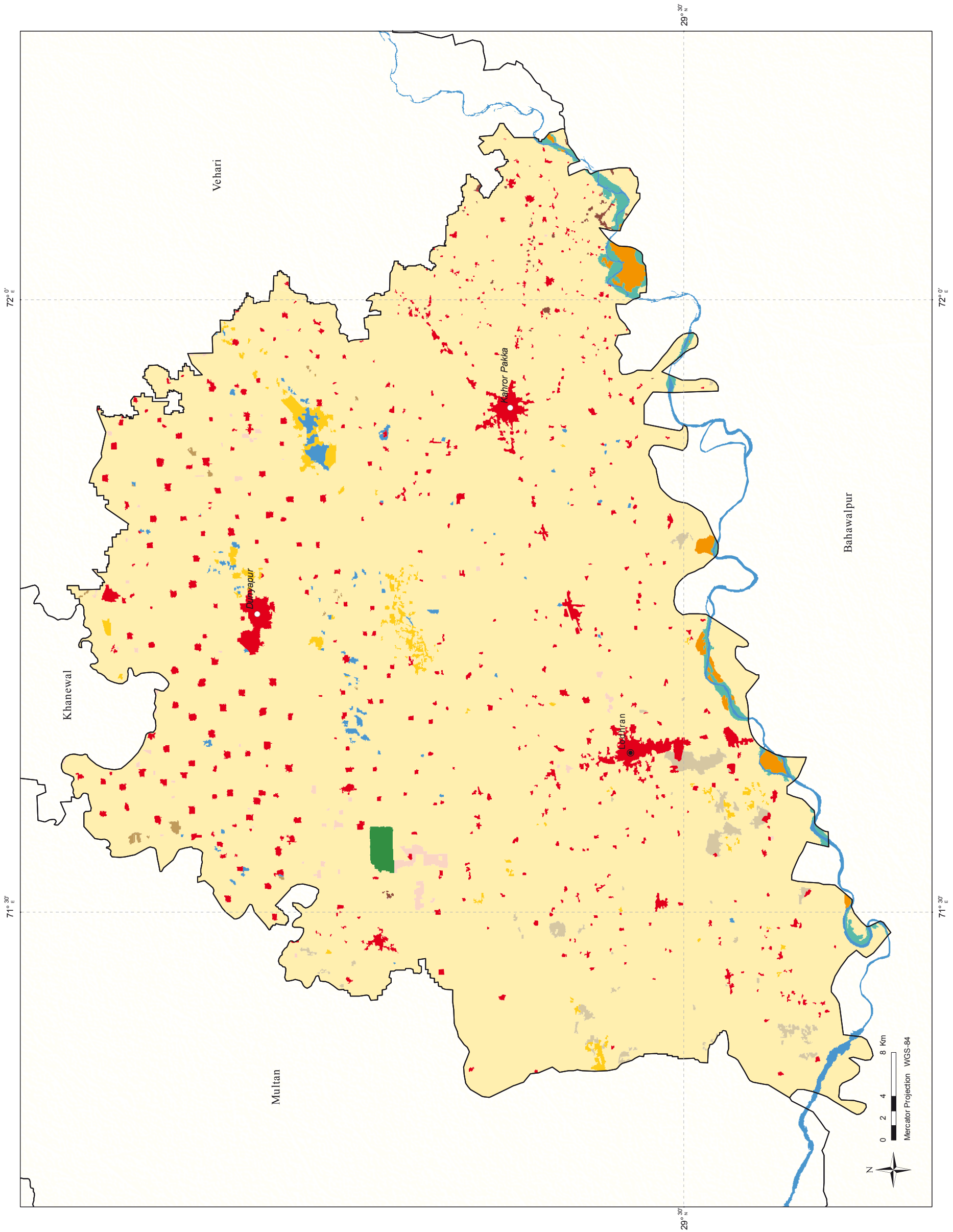
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km <sup>2</sup>	%
Orchards	10.30	0.4
Crop Irrigated	2,711.75	93.0
Crop Marginal and Irrigated Saline	23.22	0.8
Crop in Flood Plain	13.54	0.5
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	6.21	0.2
Natural Vegetation in Wet Areas	18.06	0.6
Range Lands - Natural Shrubs and Herbs	2.26	0.1
Built-up	87.39	3.0
Bare Areas	2.26	0.1
Bare Areas with Sparse Natural Vegetation	18.84	0.6
Wet Areas	21.31	0.7
Snow and Glaciers	0.00	0.0
Grand Total	2,915.15	







MANDI BAHAUDDIN

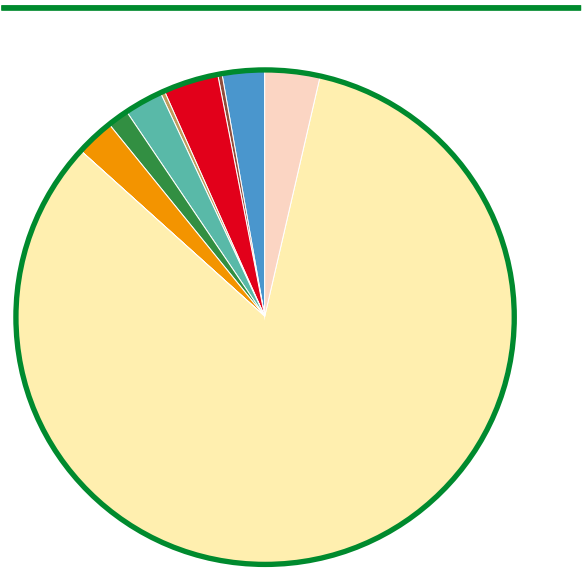
Mandi Bahauddin district is surrounded by Jhelum river in the north west, Chenab river in the south east and Sargodha district in the south west. The district has a moderate climate, hot in summer and cold in winter. The district comprises of three tehsils: Mandi Bahauddin, Malakwal and Phalia. The district headquarter is at Mandi Bahauddin.

INDEX MAP



Source: www.panoramio.com

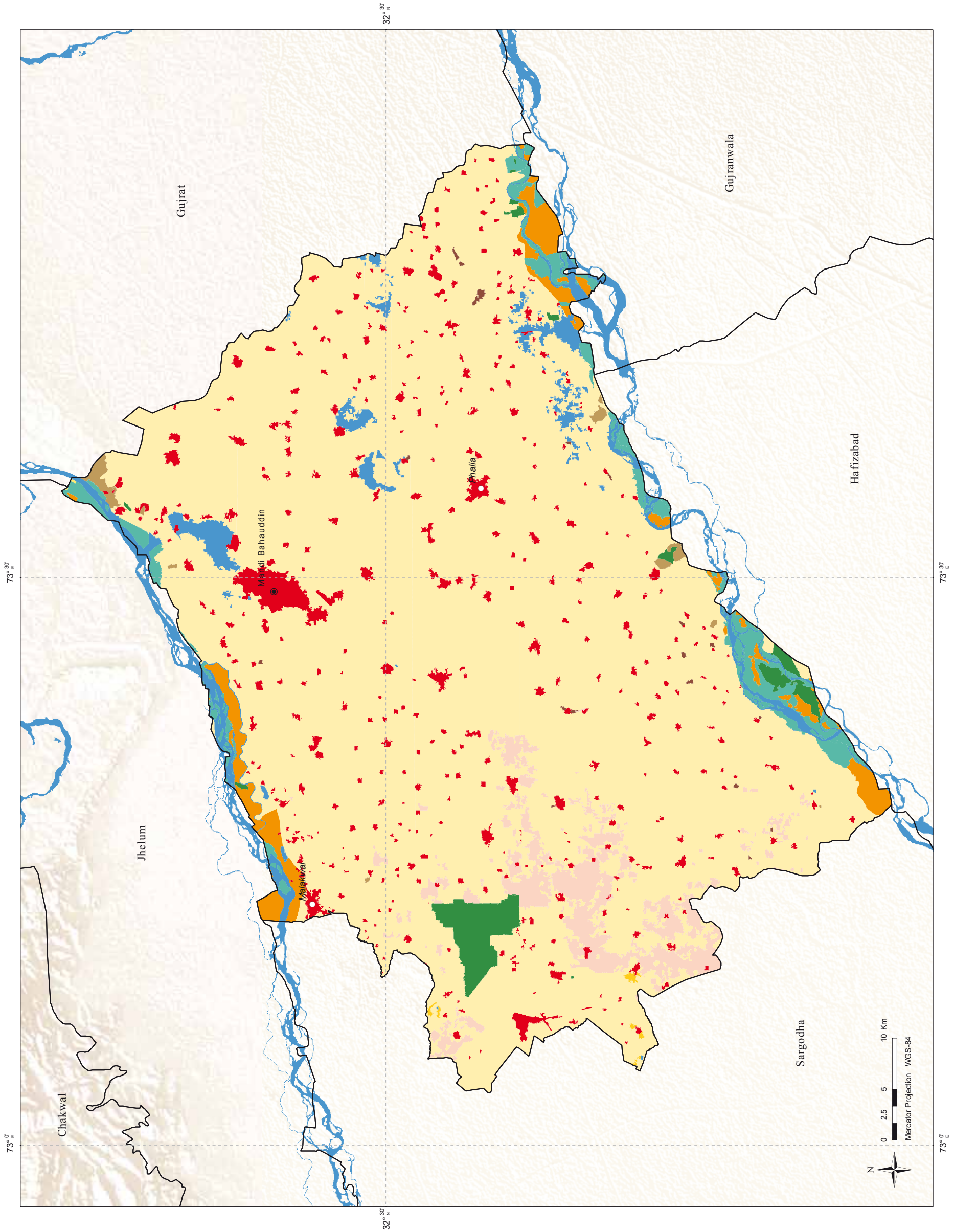
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	102.77	3.8
Crop Irrigated	2,231.91	83.0
Crop Marginal and Irrigated Saline	1.58	0.1
Crop in Flood Plain	61.52	2.3
Crop Rainfed	0.14	0.0
Forest - Natural Trees and Mangroves	41.19	1.5
Natural Vegetation in Wet Areas	68.60	2.6
Range Lands - Natural Shrubs and Herbs	8.62	0.3
Built-up	96.48	3.6
Bare Areas	2.36	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	72.55	2.7
Snow and Glaciers	0.00	0.0
Grand Total	2,687.72	







MIANWALI

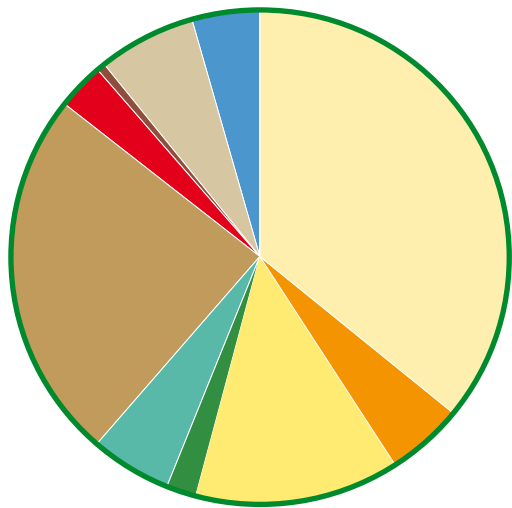
Mianwali district is in the northwest of Punjab province. The district is historically known for two prominent migrant clans, the Niazi Pashtuns and the Awan tribe. Area in the north is a continuation of the Pothohar Plateau and Kohistan-e-Namak. Mianwali district has an extreme climate with long hot summers and cold dry winters. The district comprises of three tehsils: Mianwali, Piplan and Isakhel. The district headquarter is at Mianwali.

INDEX MAP



Source: www.panoramio.com

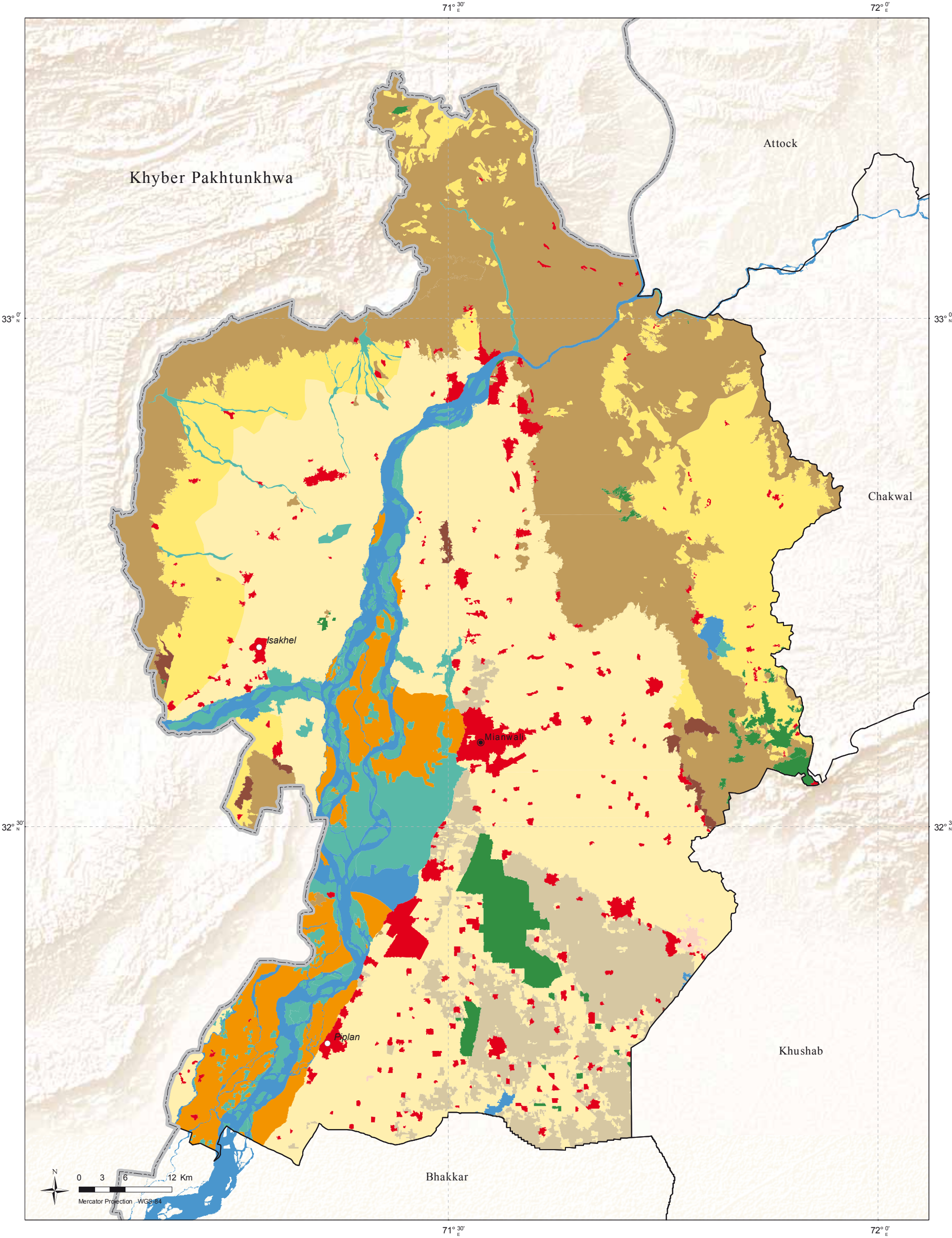
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	5.66	0.1
Crop Irrigated	2,089.60	35.8
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	300.46	5.2
Crop Rainfed	770.12	13.2
Forest - Natural Trees and Mangroves	124.55	2.1
Natural Vegetation in Wet Areas	308.75	5.3
Range Lands - Natural Shrubs and Herbs	1,397.27	24.0
Built-up	184.53	3.2
Bare Areas	24.94	0.4
Bare Areas with Sparse Natural Vegetation	382.05	6.6
Wet Areas	242.96	4.2
Snow and Glaciers	0.00	0.0
Grand Total	5,830.89	







MULTAN

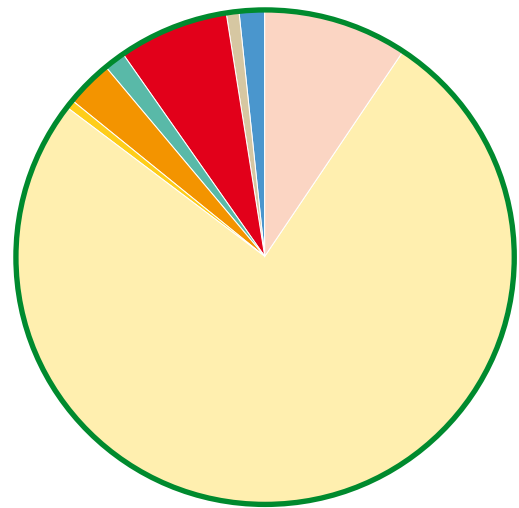
Multan is known to be one of the oldest cities in Southeast Asia. The land of Multan district is plain and very fertile with Chenab river passing on its western side, across which lies Muzaffargarh. The portions of tehsils of Multan and Shujabad close to the river Chenab are usually flooded during monsoons season. District headquarter is located at Multan and it comprises of four tehsils: Multan City, Multan Saddar, Shujaabad and Jalalpur Pirwala. A large number of Sufis shrines are present in the district.

INDEX MAP



Source: [www.travelmultan.blogspot.com](http://www.travelmultan.blogspot.com)

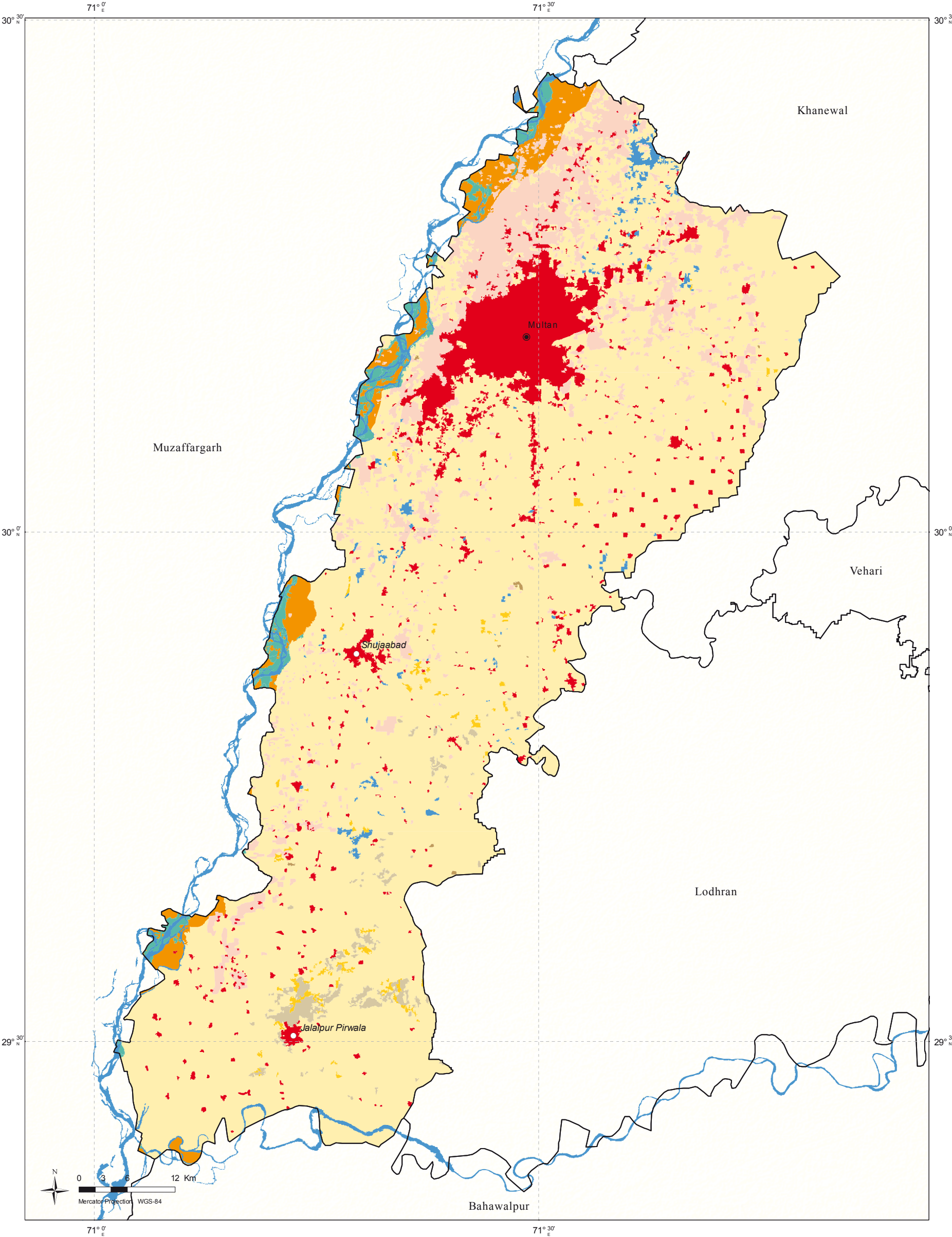
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	347.56	9.5
Crop Irrigated	2,787.35	75.9
Crop Marginal and Irrigated Saline	20.31	0.6
Crop in Flood Plain	108.06	2.9
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	0.04	0.0
Natural Vegetation in Wet Areas	51.20	1.4
Range Lands - Natural Shrubs and Herbs	1.33	0.0
Built-up	263.39	7.2
Bare Areas	0.26	0.0
Bare Areas with Sparse Natural Vegetation	36.29	1.0
Wet Areas	56.49	1.5
Snow and Glaciers	0.00	0.0
Grand Total	3,672.28	







MUZAFFARGARH

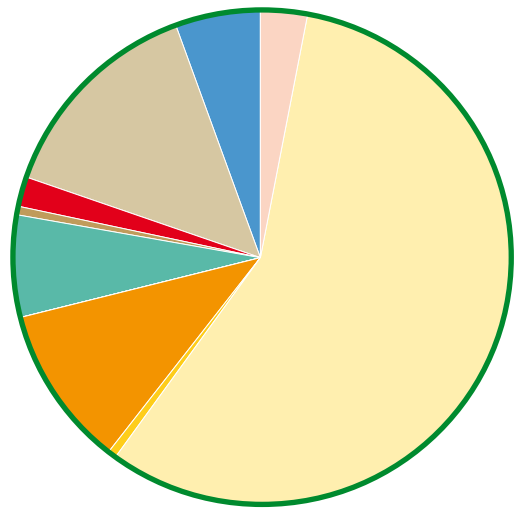
Muzaffargarh district was founded by the Mughal governor of Multan, Nawab Muzaffar Khan, in 1794.. The area around Muzaffargarh city is a flat, alluvial plain and is ideal for agriculture, with many citrus and mango farms. There are many canals that cut across the Muzaffargarh district, providing water to nearby farms, making the land very fertile. The district comprises of four tehsils: Muzaffargarh, Alipur, Jatoi and Kot Addu. The district headquarter is at Muzaffargarh.

INDEX MAP



Source: www.panoramio.com

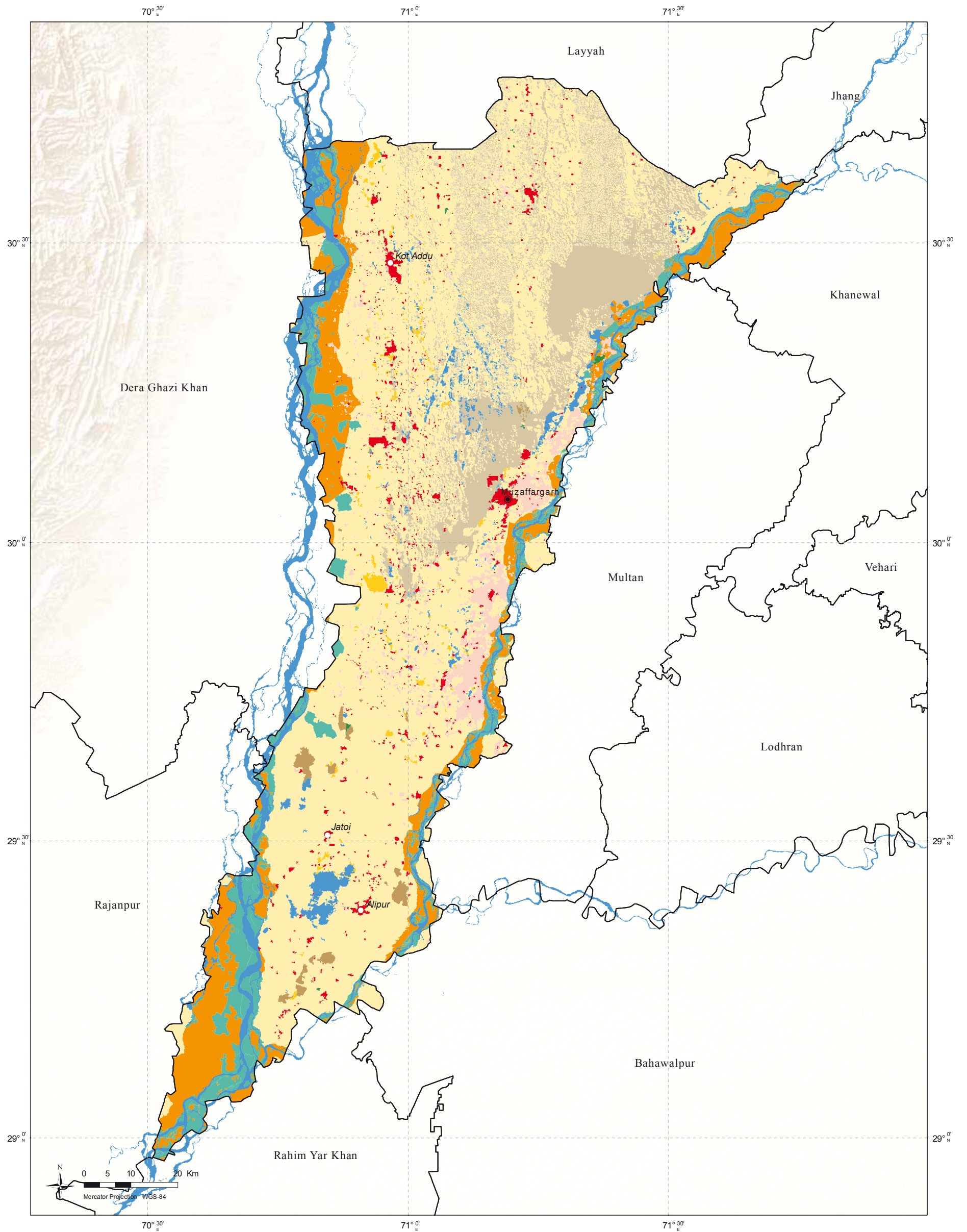
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	272.18	3.3
Crop Irrigated	4,695.95	56.8
Crop Marginal and Irrigated Saline	57.13	0.7
Crop in Flood Plain	865.53	10.5
Crop Rainfed	0.62	0.0
Forest - Natural Trees and Mangroves	4.86	0.1
Natural Vegetation in Wet Areas	535.54	6.5
Range Lands - Natural Shrubs and Herbs	55.43	0.7
Built-up	149.54	1.8
Bare Areas	1.58	0.0
Bare Areas with Sparse Natural Vegetation	1,189.11	14.4
Wet Areas	439.33	5.3
Snow and Glaciers	0.00	0.0
Grand Total	8,266.81	







# NANKANA SAHIB

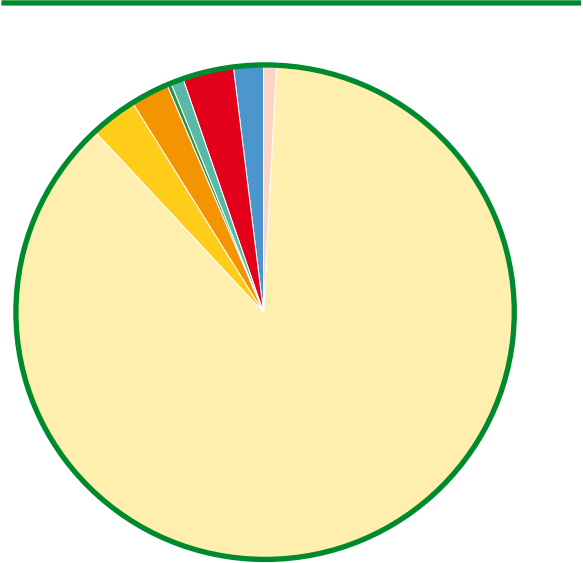
Nankana Sahib district comprises of three tehsils which are Nankana Sahib, Sangla Hill and Shahkot. The district headquarter lies at Nankana Sahib. It is famous for being the birth place of Baba Guru Nanak, the founder and first guru of Sikhism. The Gurdwara Janam Asthan in District Nankana Sahib hosts Sikhs from all over the world.

INDEX MAP



Source: Wikipedia

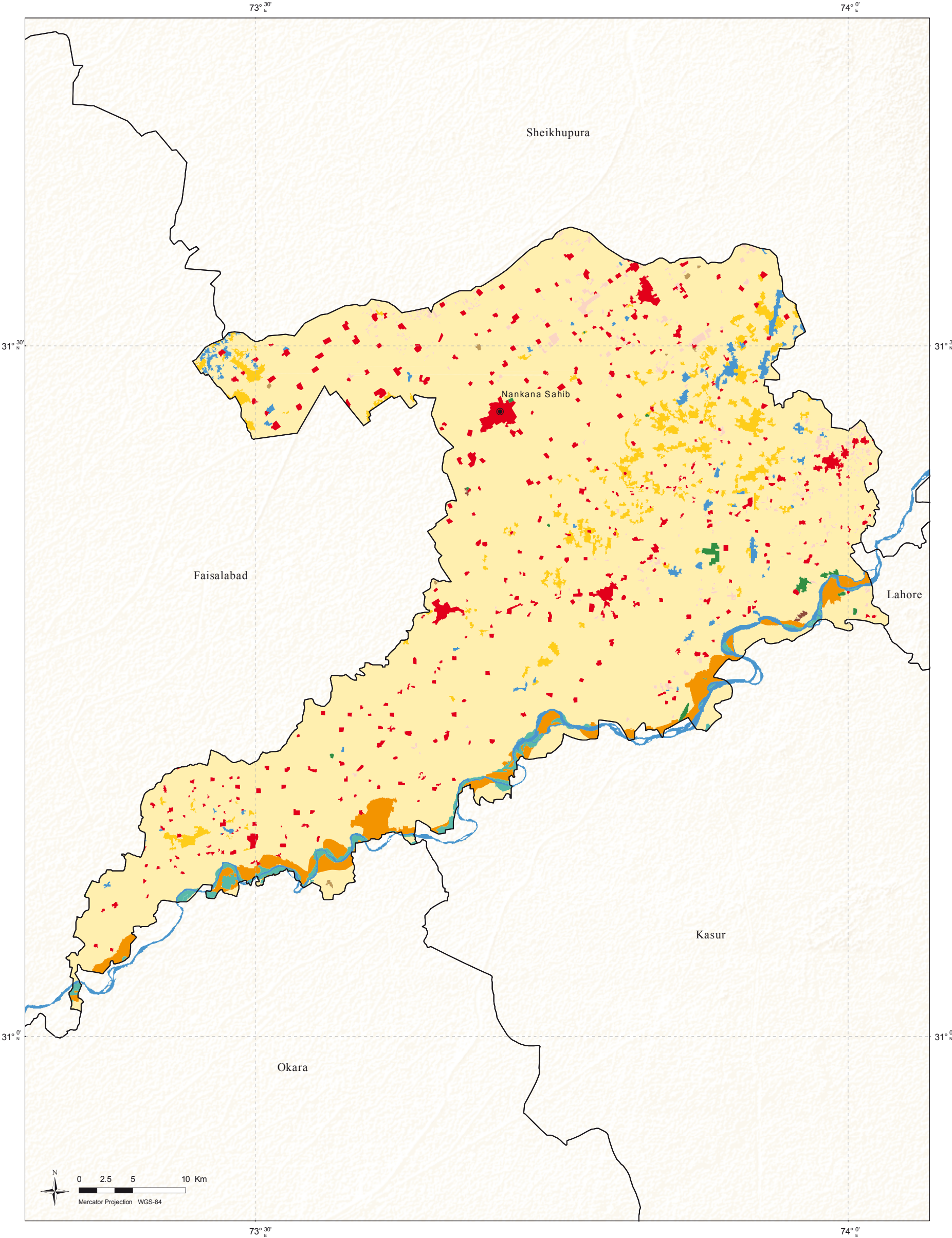
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km²	%
	Orchards	16.02	1.0
	Crop Irrigated	1,451.16	87.3
	Crop Marginal and Irrigated Saline	48.84	2.9
	Crop in Flood Plain	43.20	2.6
	Crop Rainfed	0.00	0.0
	Forest - Natural Trees and Mangroves	3.70	0.2
	Natural Vegetation in Wet Areas	14.64	0.9
	Range Lands - Natural Shrubs and Herbs	0.78	0.0
	Built-up	54.05	3.3
	Bare Areas	0.46	0.0
	Bare Areas with Sparse Natural Vegetation	0.00	0.0
	Wet Areas	29.34	1.8
	Snow and Glaciers	0.00	0.0
Grand Total		1,662.19	







NAROWAL

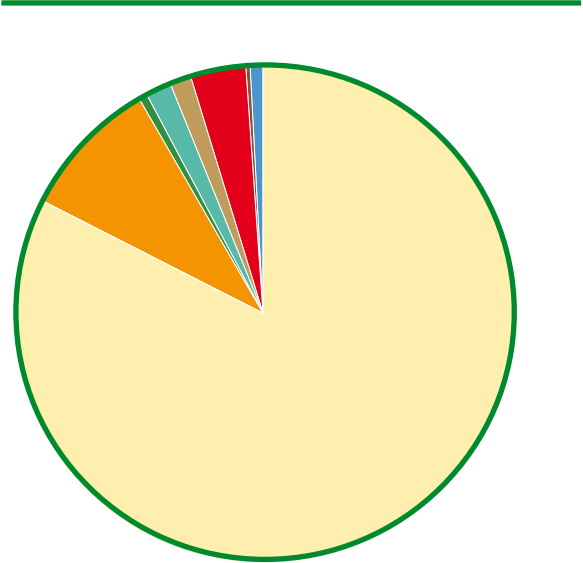
Narowal district is plain slopping down from the uplands at the base of Himalayas to the plains in south west and at an altitude of 266 metres above sea level. The district is fringed on two sides by fresh alluvial soil, around which rises the low banks that form the limits of the river beds. The district comprises of three tehsils: Narowal, Shakargarh and Zafarwal. The district headquarter is situated at Narowal. The region is famous for the production of rice.

INDEX MAP



Source: www.panoramio.com

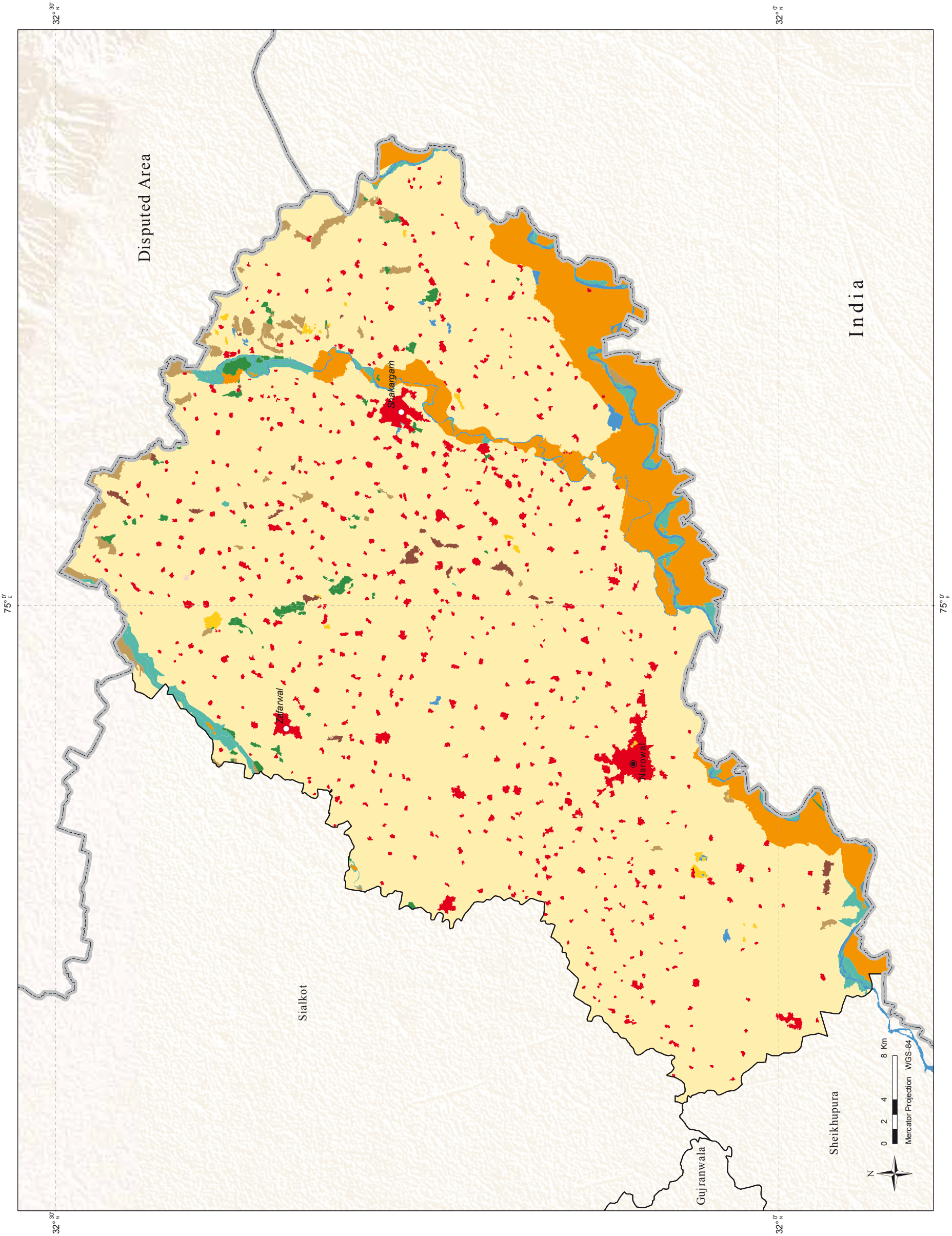
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.25	0.0
Crop Irrigated	1,947.47	82.5
Crop Marginal and Irrigated Saline	4.76	0.2
Crop in Flood Plain	212.69	9.0
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	13.74	0.6
Natural Vegetation in Wet Areas	39.26	1.7
Range Lands - Natural Shrubs and Herbs	30.54	1.3
Built-up	85.54	3.6
Bare Areas	7.23	0.3
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	19.20	0.8
Snow and Glaciers	0.00	0.0
Grand Total	2,360.68	







OKARA

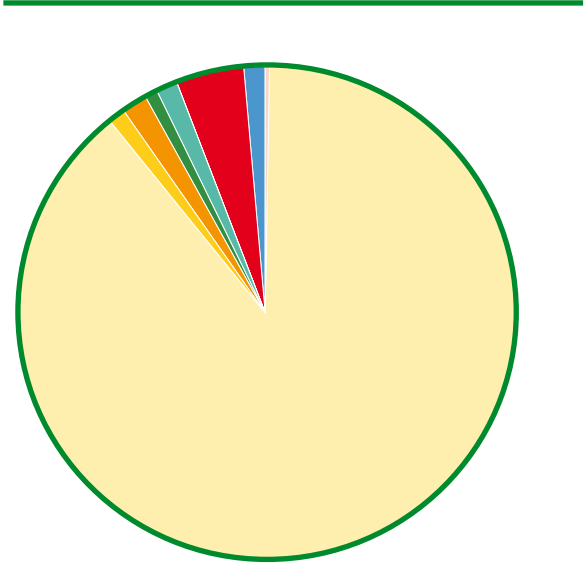
Okara district is famous for its fertile lands, peaceful natural environment and green fields of potato, tomato, sugarcane, wheat, rice and maize crops. Oranges and mangoes orchards are also prominent in the region. Okara is also famous for its breed of cattle and buffaloes. The Okara district comprises three tehsils: Okara, Depalpur and Renala Khurd. The district headquarter is at Okara.

INDEX MAP



Source: SUPARCO

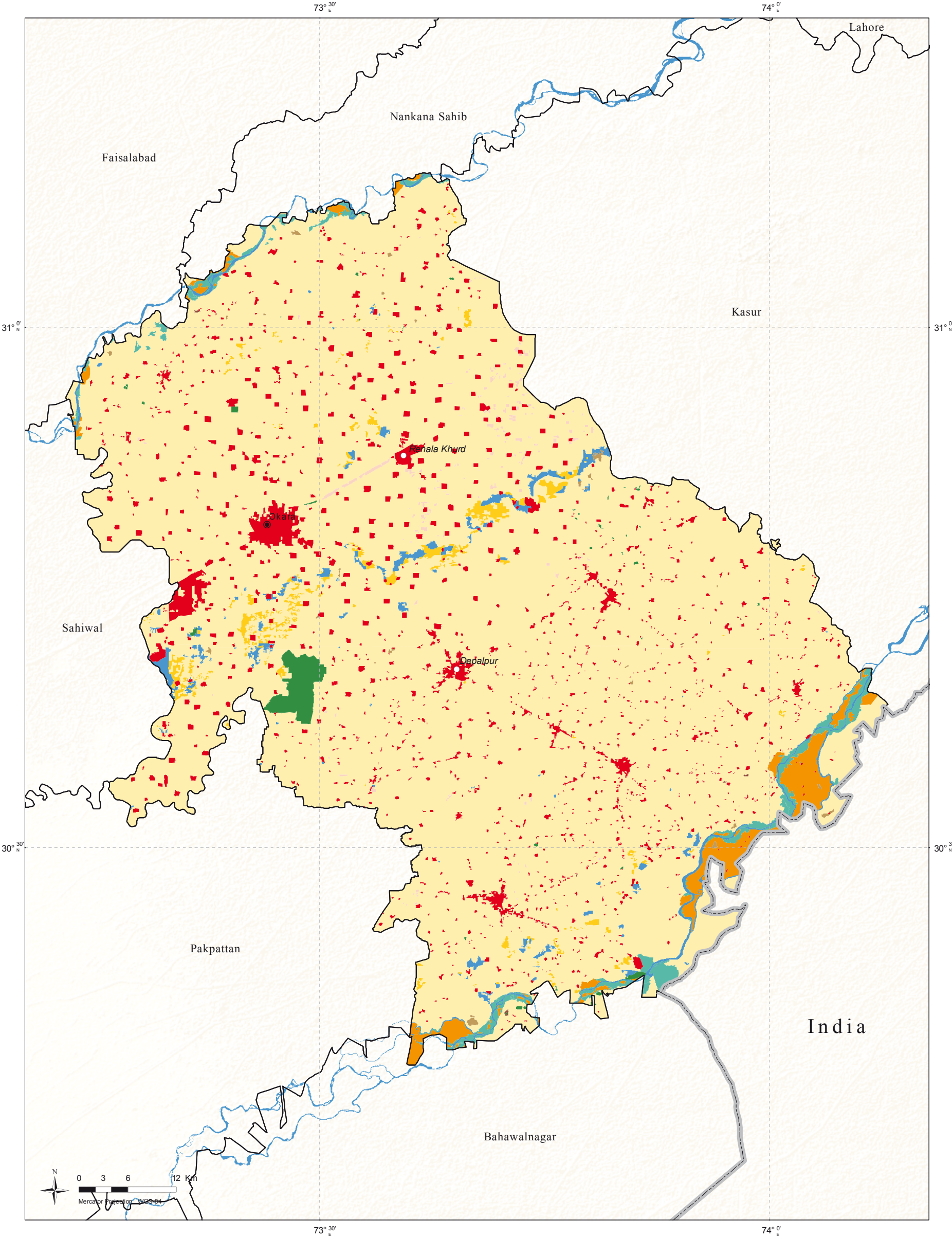
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	11.66	0.3
Crop Irrigated	3,935.00	89.0
Crop Marginal and Irrigated Saline	47.50	1.1
Crop in Flood Plain	82.52	1.9
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	30.00	0.7
Natural Vegetation in Wet Areas	57.86	1.3
Range Lands - Natural Shrubs and Herbs	4.77	0.1
Built-up	192.50	4.4
Bare Areas	0.49	0.0
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	58.95	1.3
Snow and Glaciers	0.00	0.0
Grand Total	4,421.26	







PAKPATTAN

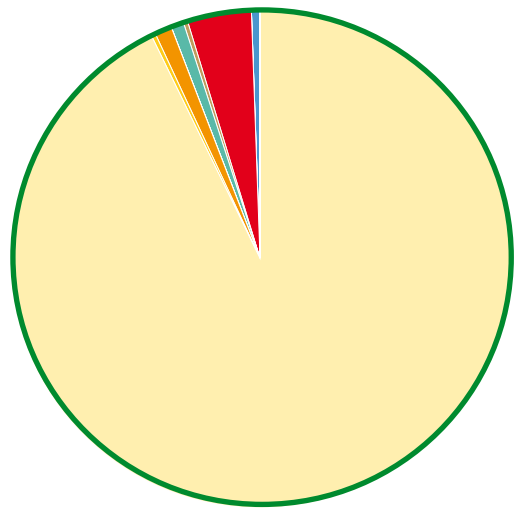
Pakpattan district is known for the fertility of its soil and therefore most of the population of Pakpattan district makea living off agriculture. The main crops are wheat, rice, cotton, maize (corn) and sugarcane. The primary fruits and vegetables that are harvested are mango, guava, carrots, potatoes and oranges. Pakpattan district has two tehsils: Pakpattan and Arifwala. The district headquarter is at Pakpattan.

INDEX MAP
















Source: www.panoramio.com

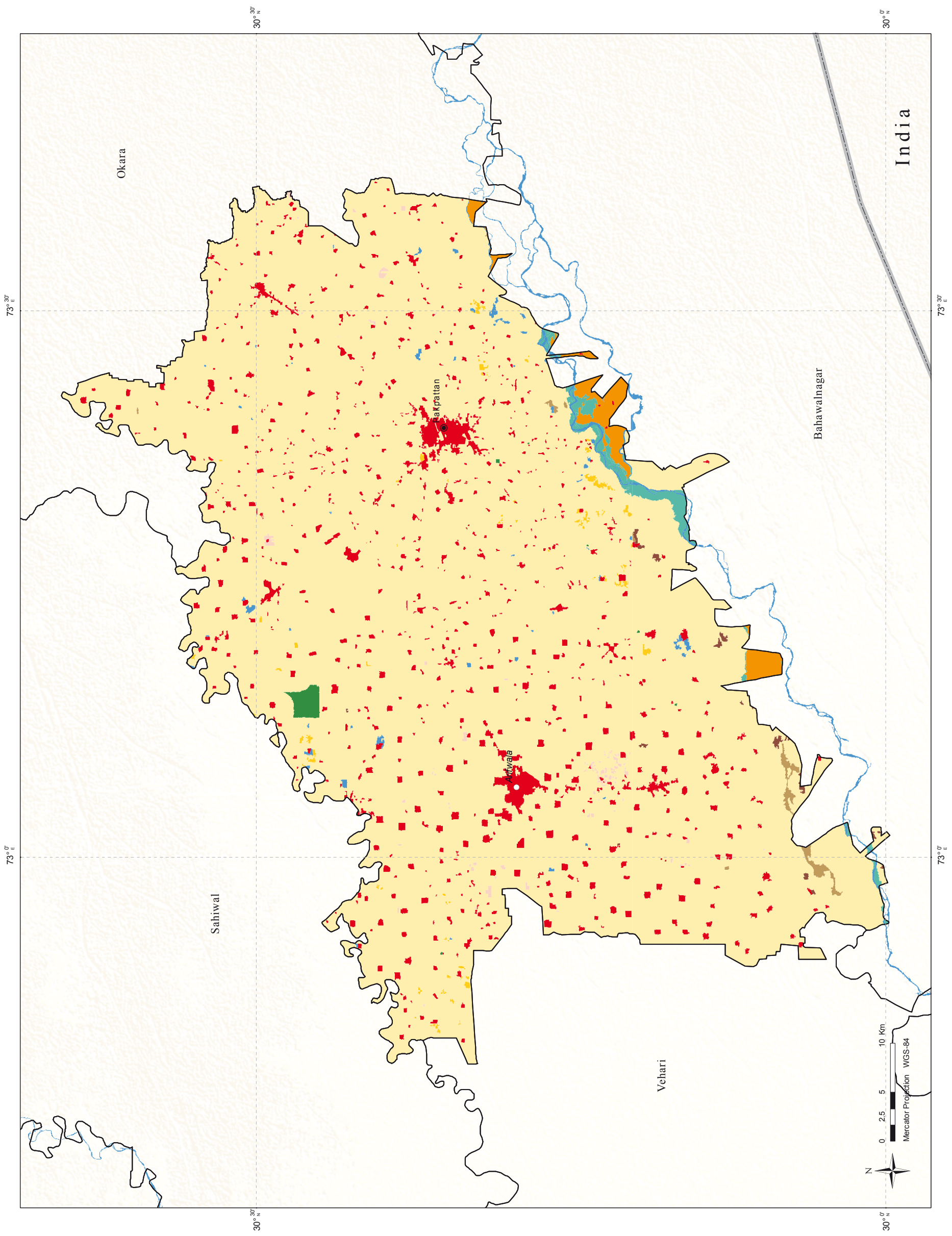
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km <sup>2</sup>	%
	Orchards	5.37	0.2
	Crop Irrigated	2,514.54	92.7
	Crop Marginal and Irrigated Saline	7.11	0.3
	Crop in Flood Plain	27.37	1.0
	Crop Rainfed	0.00	0.0
	Forest - Natural Trees and Mangroves	6.35	0.2
	Natural Vegetation in Wet Areas	20.86	0.8
	Range Lands - Natural Shrubs and Herbs	6.56	0.2
	Built-up	111.13	4.1
	Bare Areas	3.33	0.1
	Bare Areas with Sparse Natural Vegetation	0.00	0.0
	Wet Areas	10.91	0.4
	Snow and Glaciers	0.00	0.0
Grand Total		2,713.54	







RAHIM YAR KHAN

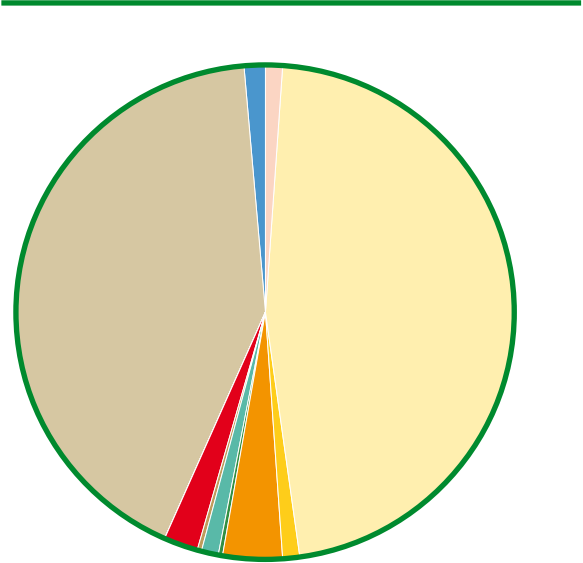
Rahim Yar Khan district is known for its main crops like cotton, sugarcane and wheat. Most of the orchards are of mangoes and citrus. This district is divided into three main physical features which are riverside area, canal irrigated area and desert area called Cholistan. Rahim Yar Khan district comprises of four tehsils: Khanpur, Liaquatpur, Rahim Yar Khan and Sadiqabad. The district headquarter is at Rahim Yar Khan.

INDEX MAP



Source: www.pakwheels.com

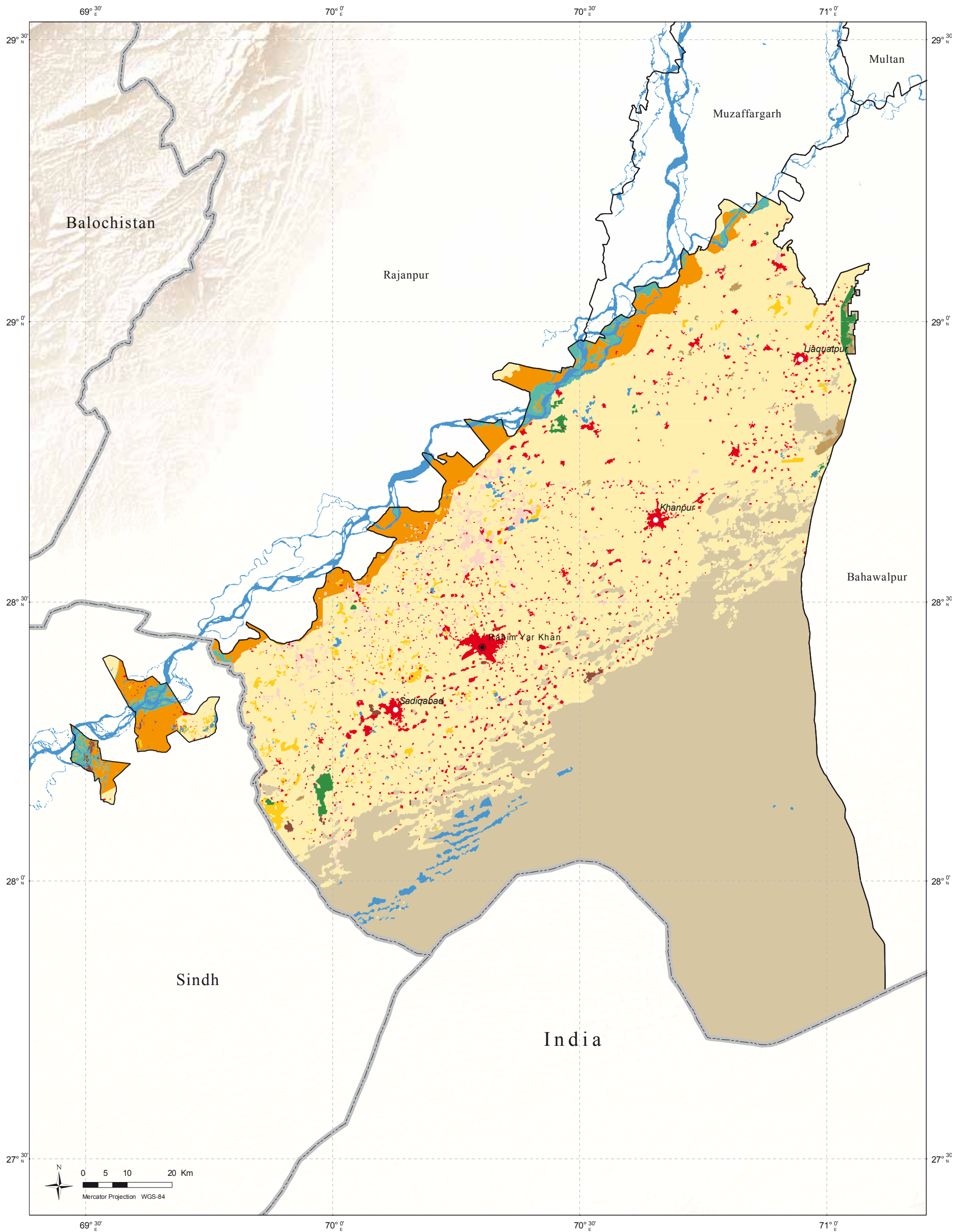
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	160.63	1.3
Crop Irrigated	5,891.23	46.7
Crop Marginal and Irrigated Saline	116.33	0.9
Crop in Flood Plain	508.02	4.0
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	50.67	0.4
Natural Vegetation in Wet Areas	120.54	1.0
Range Lands - Natural Shrubs and Herbs	28.01	0.2
Built-up	272.63	2.2
Bare Areas	30.46	0.2
Bare Areas with Sparse Natural Vegetation	5,287.23	41.9
Wet Areas	156.29	1.2
Snow and Glaciers	0.00	0.0
Grand Total	12,622.04	







RAJANPUR

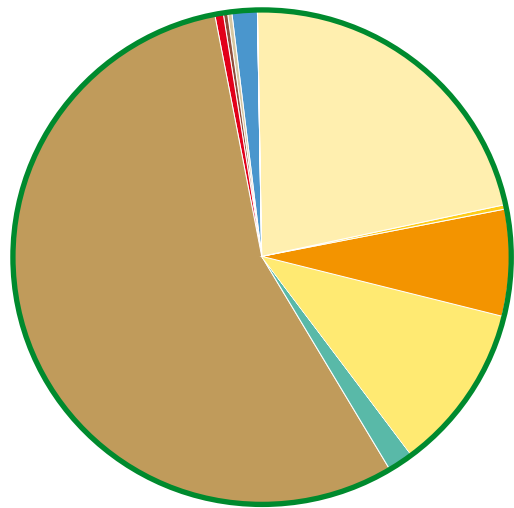
The Rajanpur district is situated on the right bank, west side of the Indus River. It is bordered on the north and west by Dera Ghazi Khan District, to the east by Muzaffargarh and Rahim Yar Khan districts and in the south lies Kashmore district of Sindh Province. Rajanpur district is famous for cotton and sugarcane crops. Wheat and rice are also cultivated. The agriculture activity depends solely upon canal irrigation since rainfall is negligible in the region. Occasional heavy rainfall causes flooding in the region but such floods are rare. The district comprises of three tehsils: Rajanpur, Jampur and Rojhan. The district headquarter is at Rajanpur.

INDEX MAP



Source: www.panoramio.com

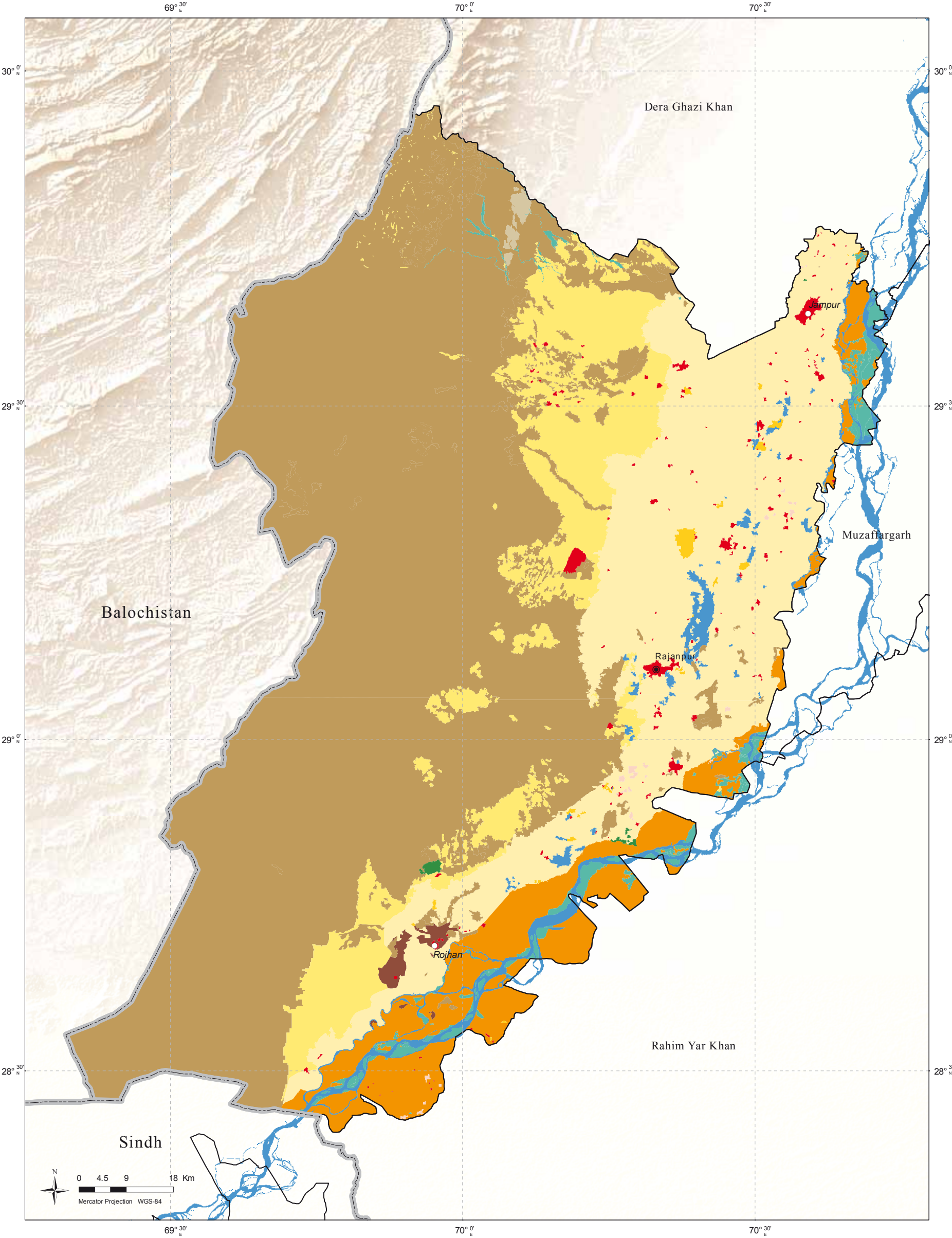
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	9.66	0.1
Crop Irrigated	2,694.63	21.8
Crop Marginal and Irrigated Saline	27.12	0.2
Crop in Flood Plain	863.77	7.0
Crop Rainfed	1,328.70	10.8
Forest - Natural Trees and Mangroves	8.82	0.1
Natural Vegetation in Wet Areas	179.79	1.5
Range Lands - Natural Shrubs and Herbs	6,885.02	55.8
Built-up	64.76	0.5
Bare Areas	39.69	0.3
Bare Areas with Sparse Natural Vegetation	21.67	0.2
Wet Areas	216.54	1.8
Snow and Glaciers	0.00	0.0
Grand Total	12,340.17	







RAWALPINDI

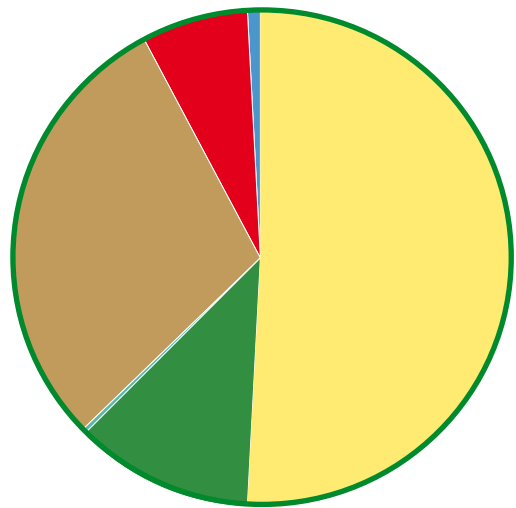
Rawalpindi is situated at the Potwar Plateau near Islamabad. The principal crops in the district are wheat, barley, maize, millets, and pulses. The district comprises of seven tehsils: Gujar Khan, Kahuta, Kallar Syedan, Kotli Sattian, Murree, Taxila and Rawalpindi. The famous University of Engineering and Technology (UET Taxila) is also located in this district. The district headquarter is at Rawalpindi.

INDEX MAP



Source: www.panoramio.com

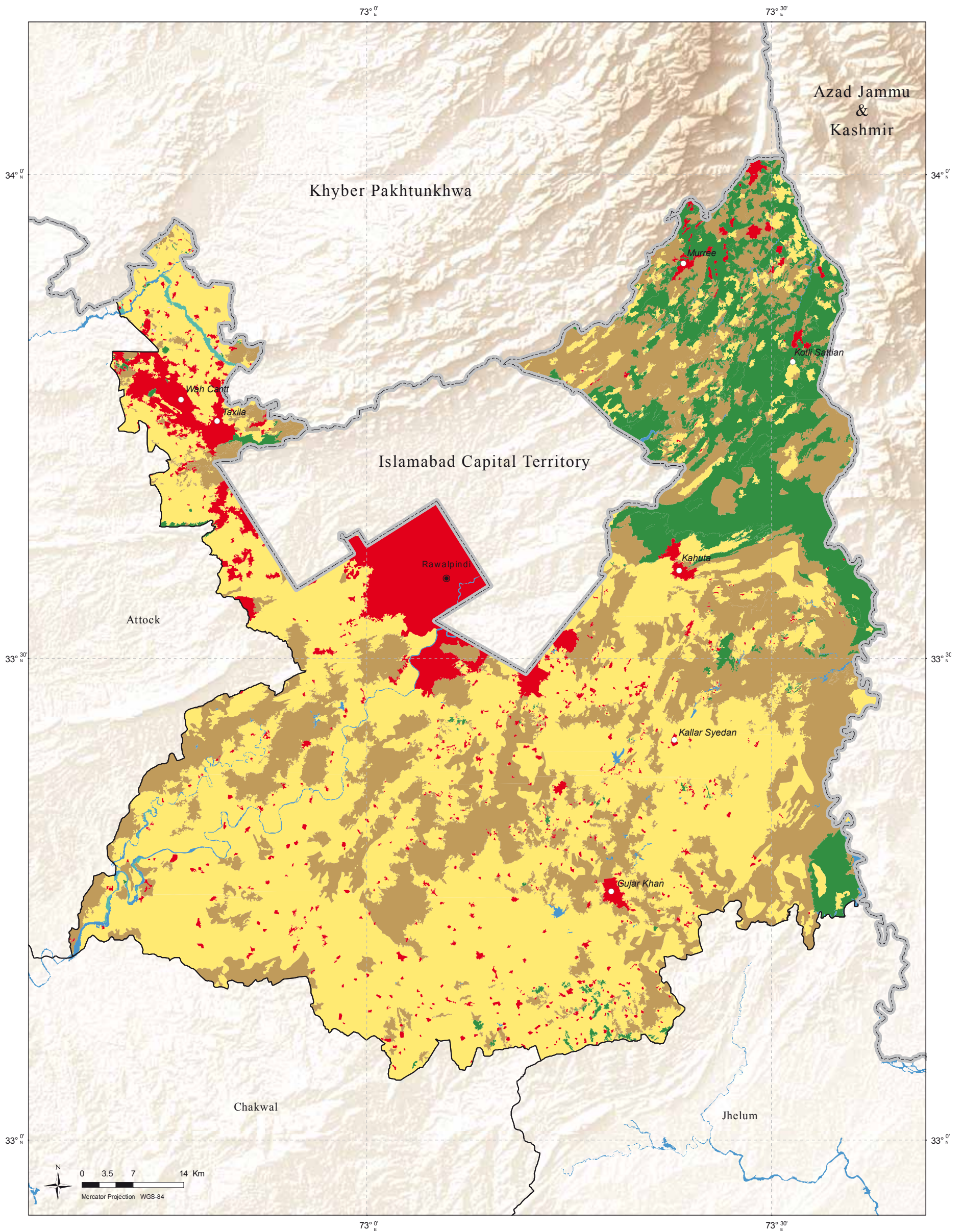
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	0.54	0.0
Crop Irrigated	0.00	0.0
Crop Marginal and Irrigated Saline	0.00	0.0
Crop in Flood Plain	0.01	0.0
Crop Rainfed	2,719.17	51.0
Forest - Natural Trees and Mangroves	618.30	11.6
Natural Vegetation in Wet Areas	10.20	0.2
Range Lands - Natural Shrubs and Herbs	1,574.04	29.5
Built-up	366.30	6.9
Bare Areas	0.00	0.0
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	39.26	0.7
Snow and Glaciers	0.00	0.0
Grand Total	5,327.83	







SAHIWAL

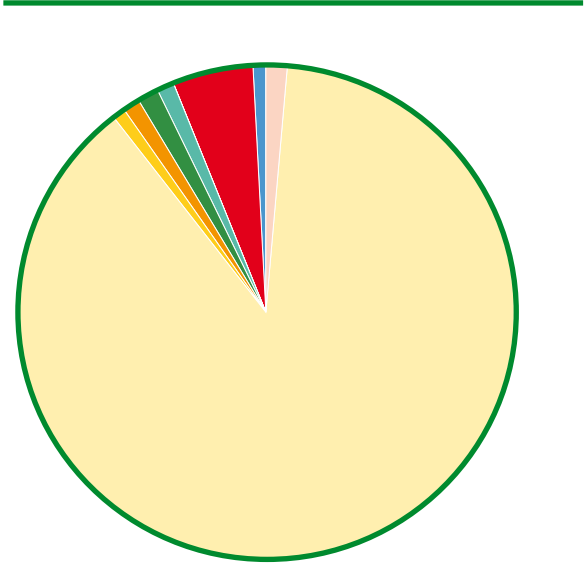
Agriculture is important to the local economy of the Sahiwal district and the main crops are wheat, cotton, sugarcane, maize and rice while main fruits are citrus, mangoes and guava. The district is also famous for its cattle and breed of buffaloes. The district comprises of two tehsils: Sahiwal and Chichawatni. The district headquarter is at Sahiwal.

INDEX MAP



Source: SUPARCO

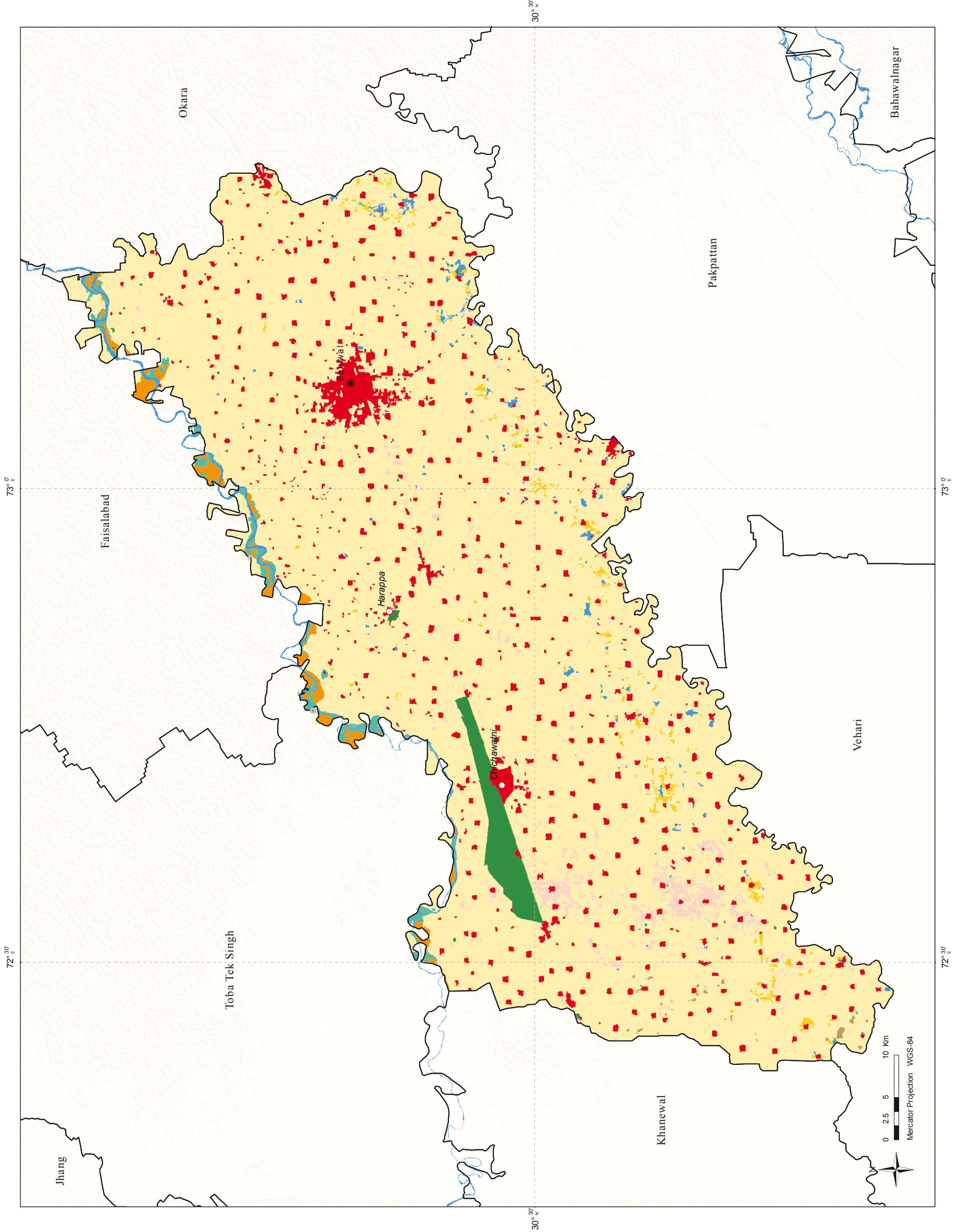
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	52.78	1.6
Crop Irrigated	2,821.72	88.1
Crop Marginal and Irrigated Saline	26.54	0.8
Crop in Flood Plain	29.79	0.9
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	50.35	1.6
Natural Vegetation in Wet Areas	28.53	0.9
Range Lands - Natural Shrubs and Herbs	2.72	0.1
Built-up	166.87	5.2
Bare Areas	0.10	0.0
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	25.13	0.8
Snow and Glaciers	0.00	0.0
Grand Total	3,204.52	







SARGODHA

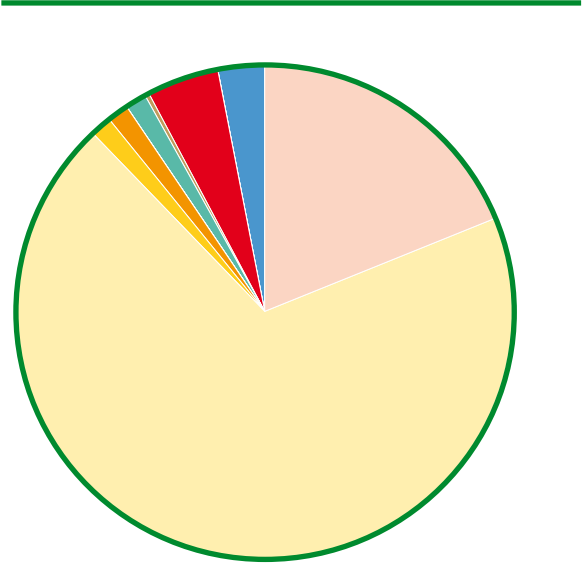
Sargodha district has very fertile land, with main crops of wheat, rice, and sugarcane. The Sargodha district and region is also famous for citrus fruit and kenno (orange). The district comprises of seven tehsils: Bhera, Bhalwal, Kot Momin, Sahiwal, Sargodha, Shahpur and Silanwali. The district headquarter is at Sargodha.

INDEX MAP



Source: www.panoramio.com

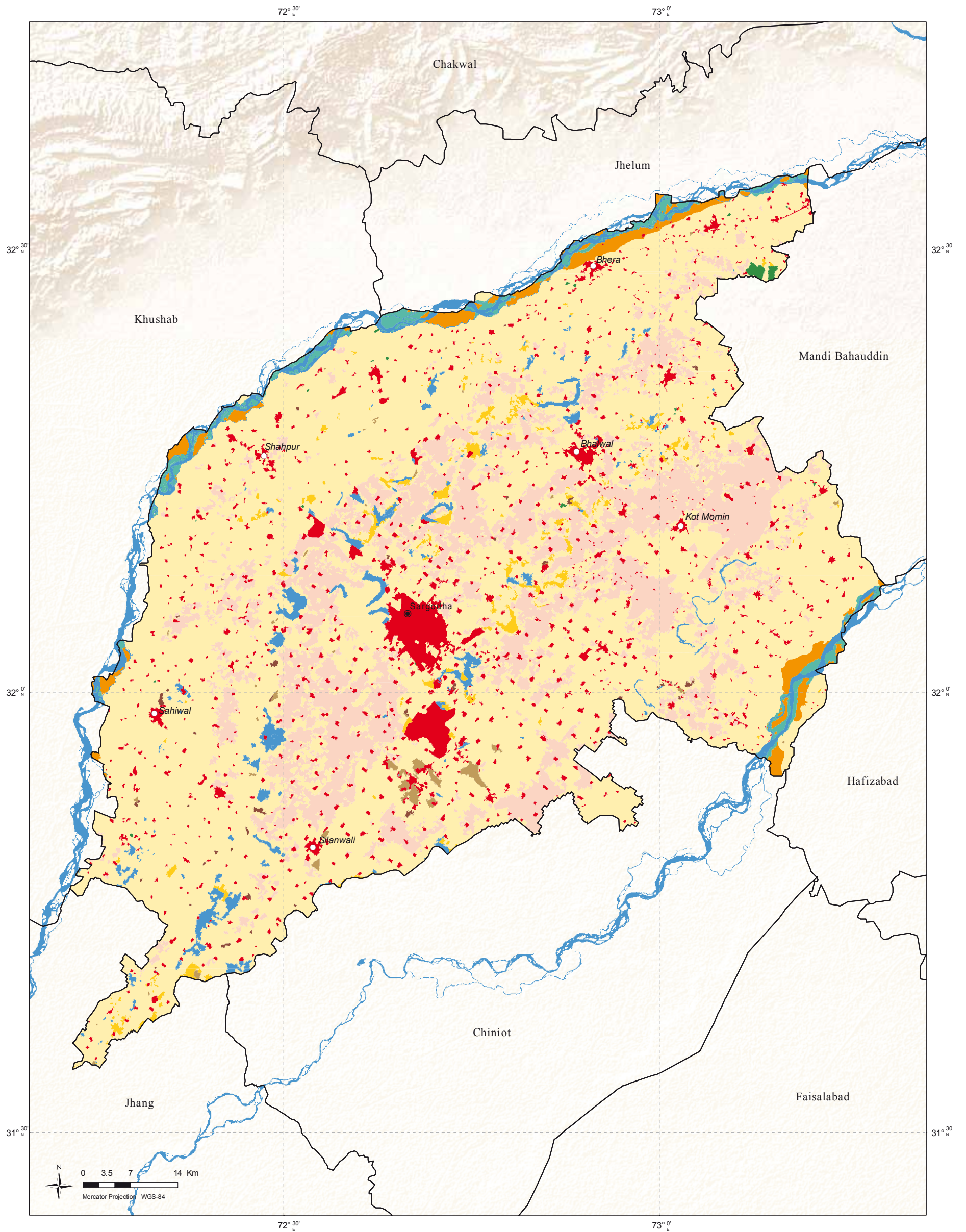
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	1,114.84	19.0
Crop Irrigated	4,028.19	68.8
Crop Marginal and Irrigated Saline	70.27	1.2
Crop in Flood Plain	89.22	1.5
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	6.45	0.1
Natural Vegetation in Wet Areas	69.14	1.2
Range Lands - Natural Shrubs and Herbs	21.96	0.4
Built-up	278.00	4.7
Bare Areas	8.25	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	166.74	2.8
Snow and Glaciers	0.00	0.0
Grand Total	5,853.05	







# SHEIKHUPURA

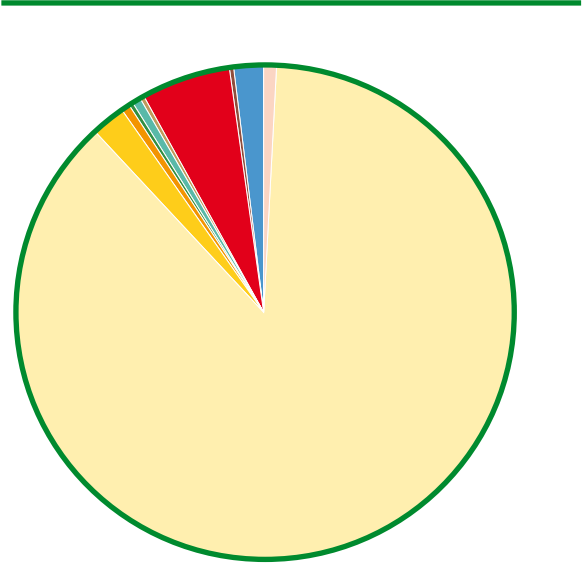
Sheikhupura district’s major crops are sugarcane, wheat, rice and guava. A variety of vegetables are also grown in the district. The district comprises of five tehsils Sheikhupura, Firozwala, Muridke, Sharaqpur and Safdarabad. The district headquarter is at Seikhupura.

## INDEX MAP



Source: SUPARCO

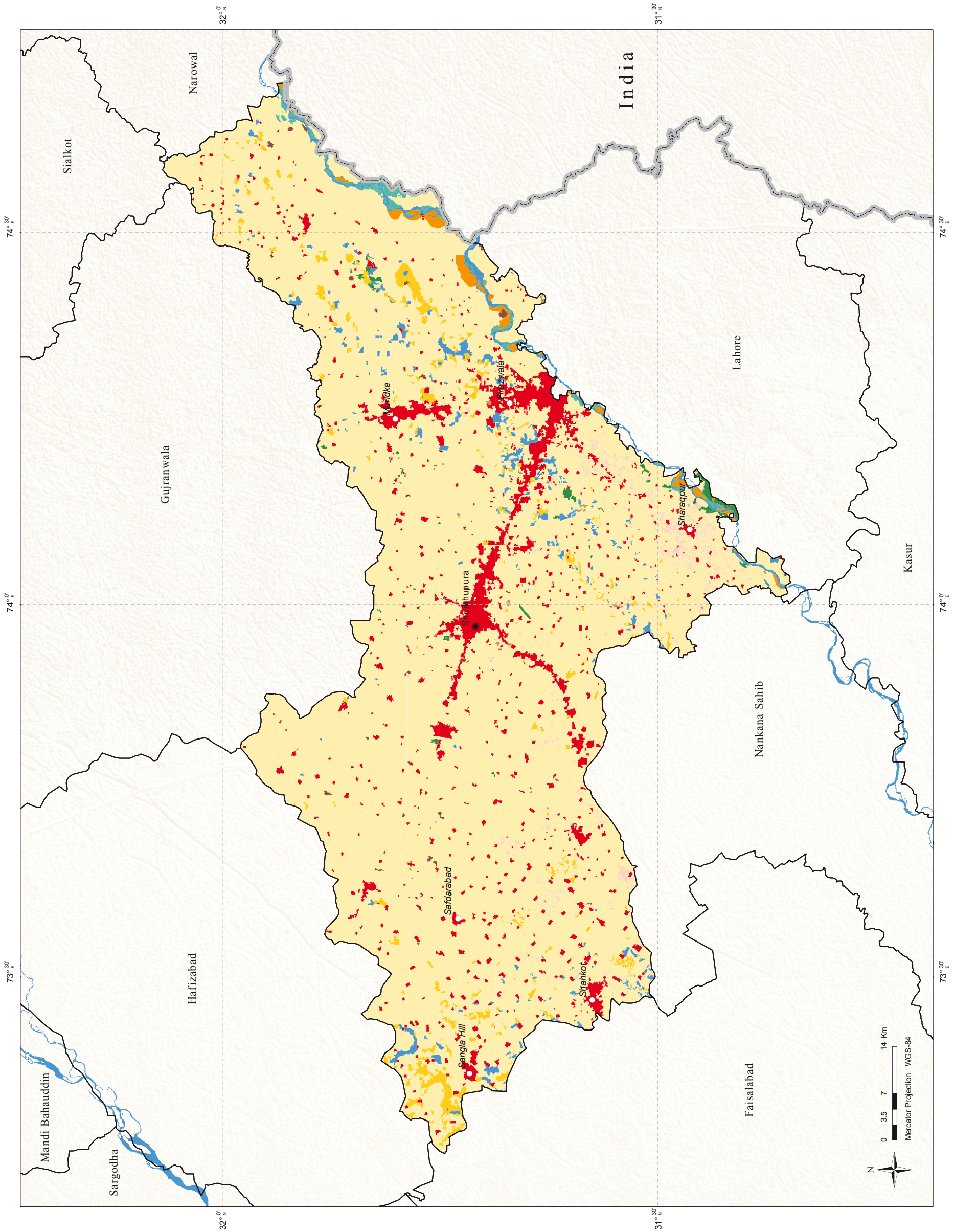
## LAND COVER IN PERCENTAGE



## DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	42.81	1.0
Crop Irrigated	3,794.56	87.2
Crop Marginal and Irrigated Saline	94.60	2.2
Crop in Flood Plain	27.81	0.6
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	14.95	0.3
Natural Vegetation in Wet Areas	27.73	0.6
Range Lands - Natural Shrubs and Herbs	3.00	0.1
Built-up	259.45	6.0
Bare Areas	5.18	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	83.64	1.9
Snow and Glaciers	0.00	0.0
Grand Total	4,353.74	



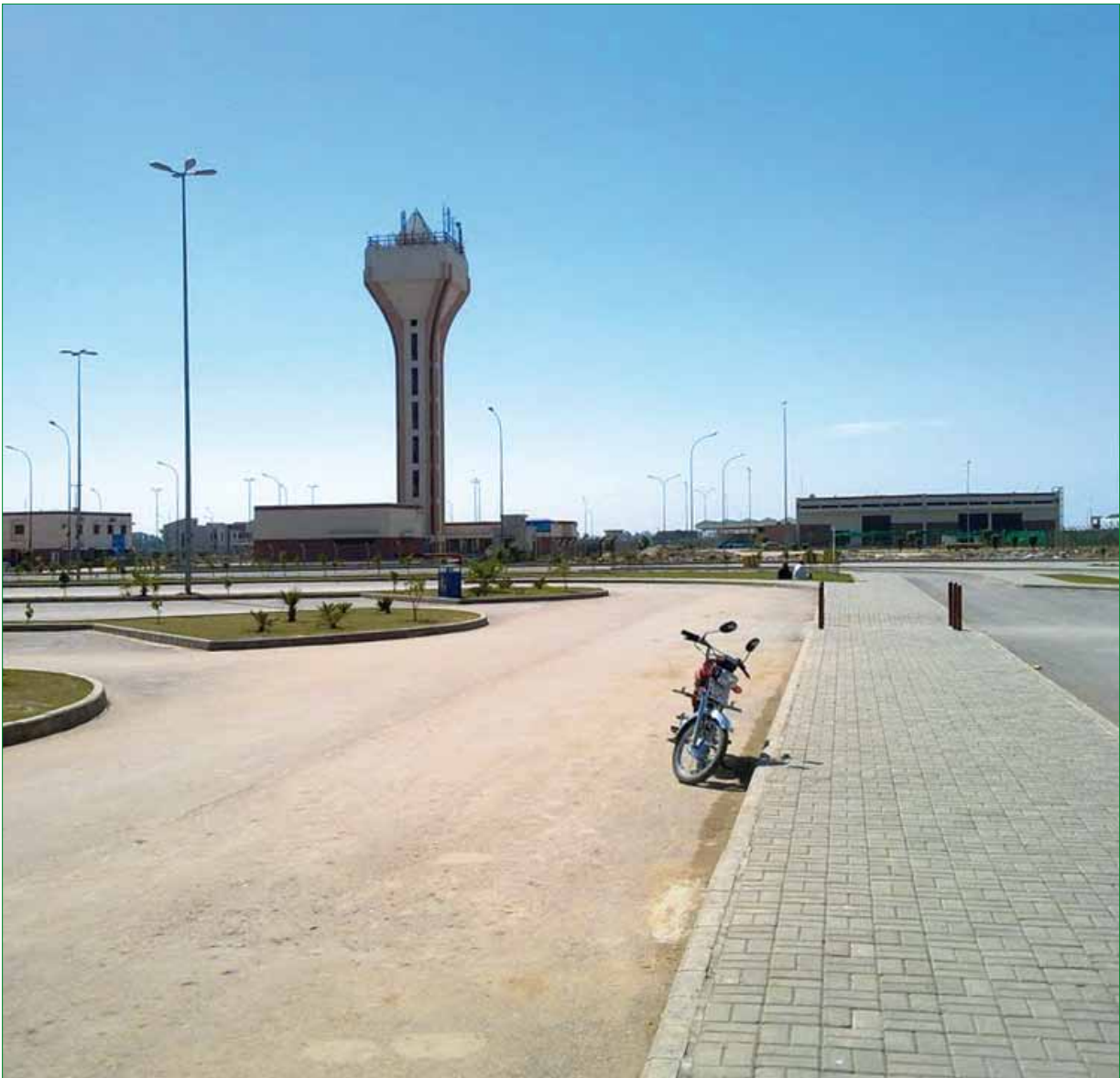




SIALKOT

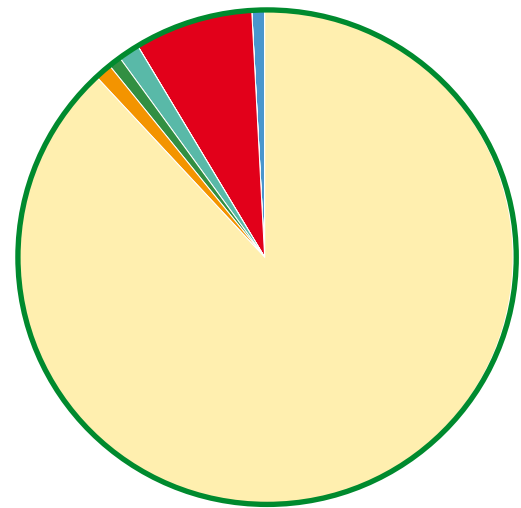
Sialkot district’s main crops are wheat and rice; the main fruits guava and citruses. Vegetables cultivated include potatoes, turnips, garlic, cauliflower, peas, and onions. Sialkot is traditionally a centre of industrial production of sports goods, surgical instruments, leather goods/garments, cutlery and musical instruments. The famous personality, Dr. Allama Iqbal, a philosopher, a politician and the national poet of Pakistan belonged to Sialkot. The district comprises of four tehsils; Daska, Pasrur, Sambrial and Sialkot. The district headquarter lies at Sialkot.

INDEX MAP



Source: www.panoramio.com

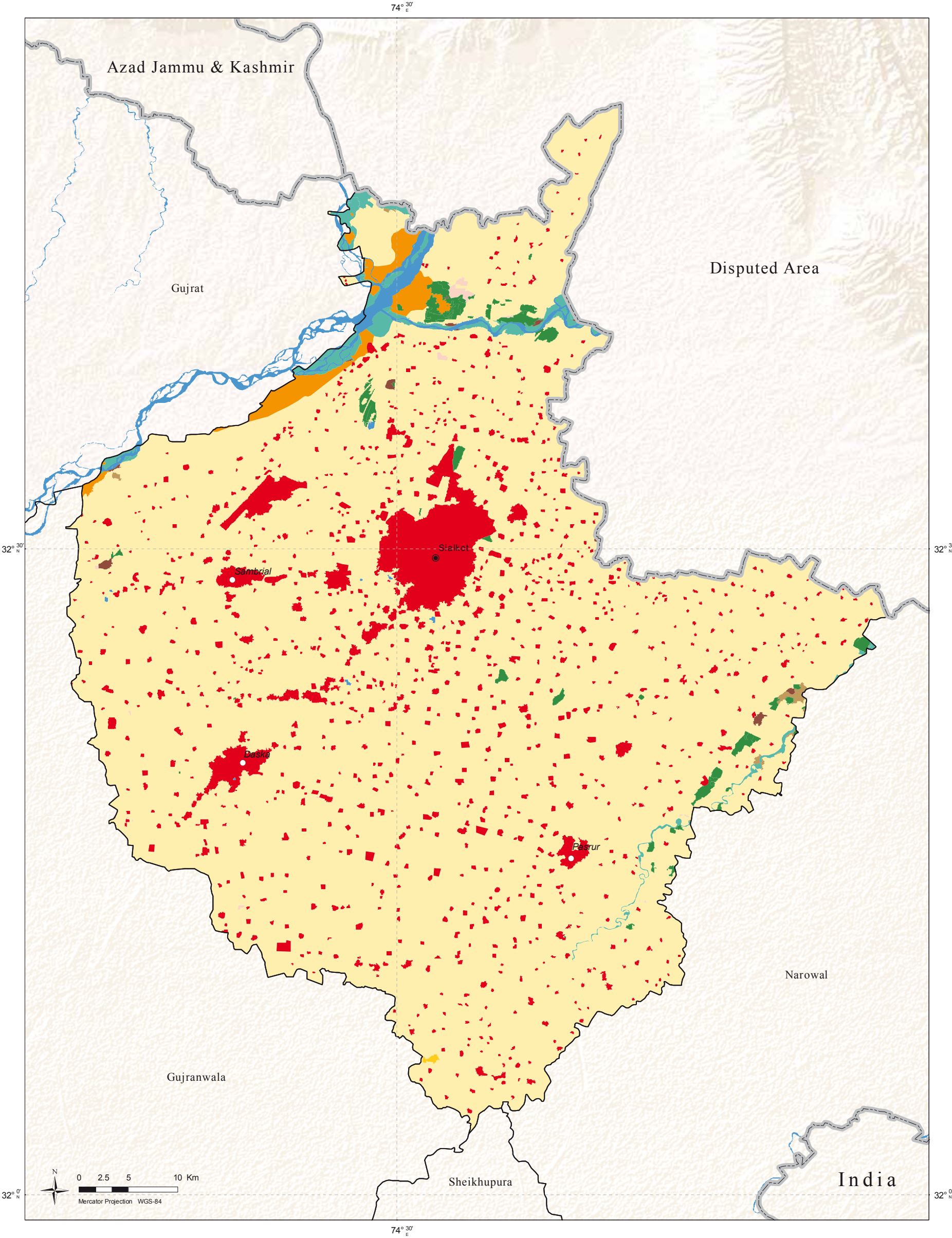
LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	3.35	0.1
Crop Irrigated	2,665.78	87.9
Crop Marginal and Irrigated Saline	0.63	0.0
Crop in Flood Plain	35.04	1.2
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	28.52	0.9
Natural Vegetation in Wet Areas	36.40	1.2
Range Lands - Natural Shrubs and Herbs	3.21	0.1
Built-up	234.87	7.7
Bare Areas	3.23	0.1
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	21.70	0.7
Snow and Glaciers	0.00	0.0
Grand Total	3,032.74	







# TOBA TEK SINGH

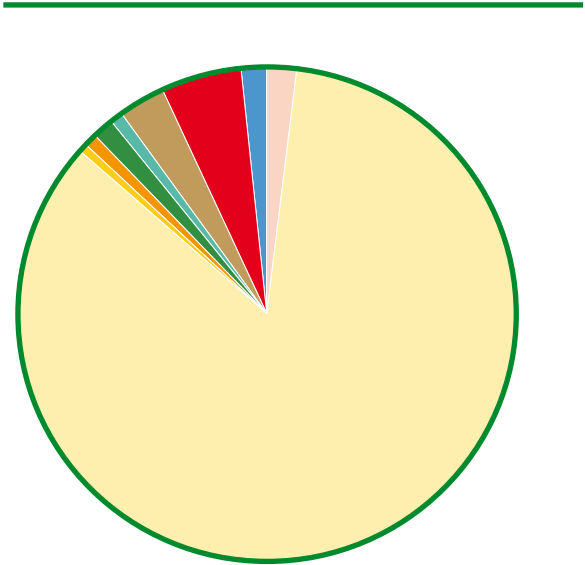
Toba Tek Singh district is one of the best producers of oranges in Pakistan. The majority of people are employed in the agriculture industry and produce several kinds of agricultural and dairy products. The main produces of the district are meat, eggs, cotton, maize, several pulses, peach, guava, tomato, melon, water melon, mango, tobacco and onion. The district comprises of four tehsils: Toba Tek Singh, Gojra, Kamalia, and Pir Mahal. The district headquarter is at Toba Tek Singh.

## INDEX MAP



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

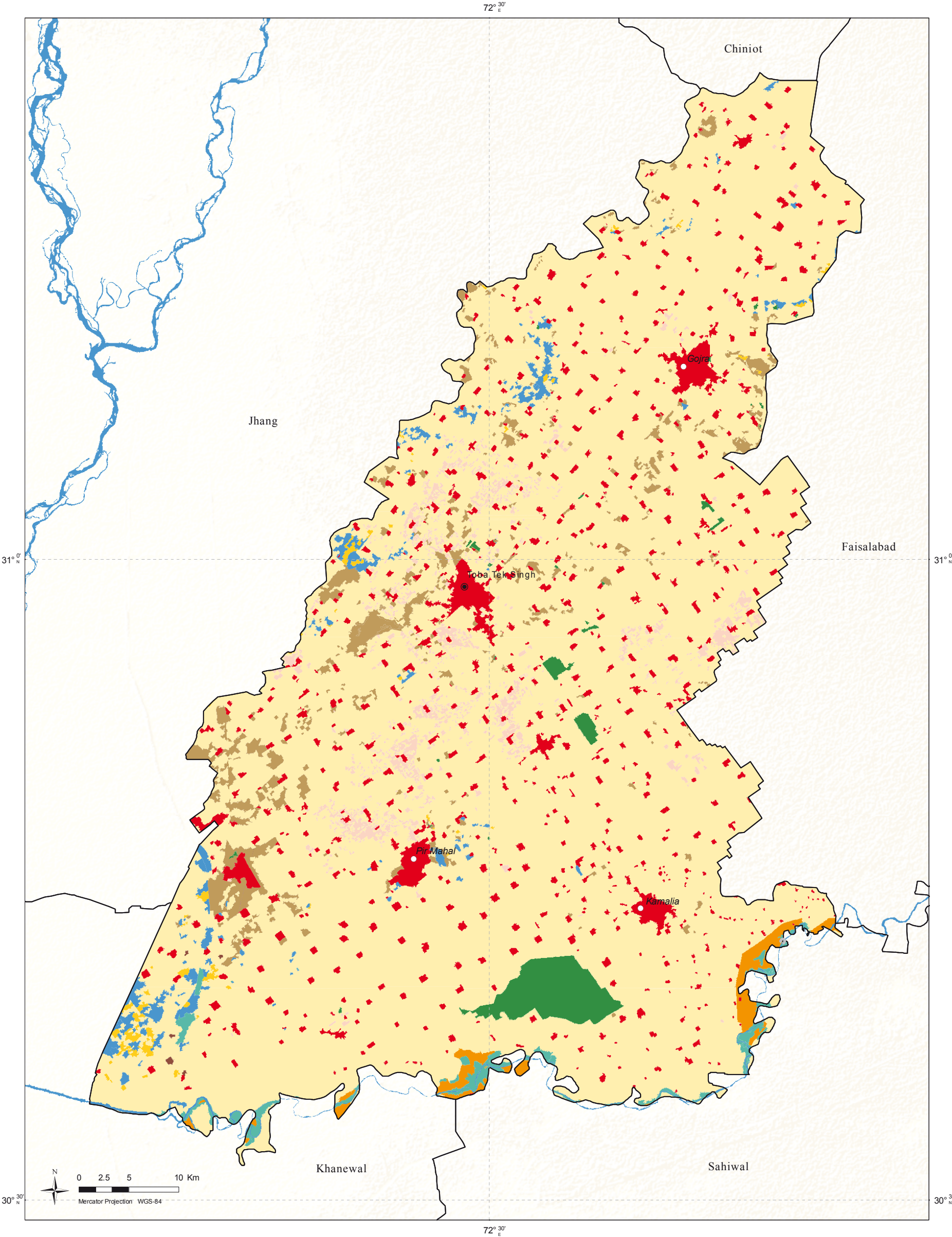
## LAND COVER IN PERCENTAGE



## DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend	km²	%
Orchards	69.94	2.1
Crop Irrigated	2,764.79	84.4
Crop Marginal and Irrigated Saline	12.78	0.4
Crop in Flood Plain	26.58	0.8
Crop Rainfed	0.00	0.0
Forest - Natural Trees and Mangroves	53.15	1.6
Natural Vegetation in Wet Areas	24.30	0.7
Range Lands - Natural Shrubs and Herbs	104.53	3.2
Built-up	172.41	5.3
Bare Areas	0.76	0.0
Bare Areas with Sparse Natural Vegetation	0.00	0.0
Wet Areas	46.91	1.4
Snow and Glaciers	0.00	0.0
Grand Total	3,276.13	







VEHARI

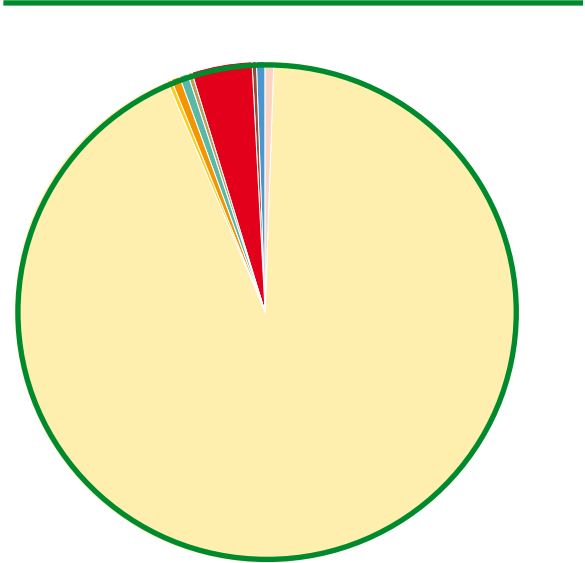
The district consists of plain area with fertile land and is a part of Indus plain. It has the best cultivated land which is suitable for cotton, wheat and other agricultural crops. Vehari district lies at Nili Bar which is between Ravi, Beas and Sutlej rivers. The land is irrigated with the fertile water of Chenab and Ravi rivers. It has a big canal system with two canals, Pakpatan and Mailsi canal. The district comprises of three tehsils Burewala, Mailsi and Vehari. The district headquarter is at Vehari.

INDEX MAP



Source: www.panoramio.com

LAND COVER IN PERCENTAGE



DISTRIBUTION OF LAND COVER IN THE DISTRICT

Legend		km²	%
	Orchards	30.82	0.7
	Crop Irrigated	4,079.57	93.0
	Crop Marginal and Irrigated Saline	12.80	0.3
	Crop in Flood Plain	18.27	0.4
	Crop Rainfed	0.00	0.0
	Forest - Natural Trees and Mangroves	0.01	0.0
	Natural Vegetation in Wet Areas	28.66	0.7
	Range Lands - Natural Shrubs and Herbs	9.36	0.2
	Built-up	174.11	4.0
	Bare Areas	10.76	0.2
	Bare Areas with Sparse Natural Vegetation	1.04	0.0
	Wet Areas	19.26	0.4
	Snow and Glaciers	0.00	0.0
Grand Total		4,384.67	



