



DISTRICT PROFILES

Attock district lies on the eastern bank of Indus River, north-east of Punjab province. The topography varies from hills to plateaus and dissected plains. Climate of the district comprises of hot summers and cold winters. The main crops include wheat, groundnut, maize and vegetables. The major landmark of the district is famous Attock Fort. There are six tehsils in the district: Attock, Fateh Jang, Pindi Gheb, Jand, Hazro and Hasan Abdal. The district headquarter is located at Attock.

SOIL ATTRIBUTES

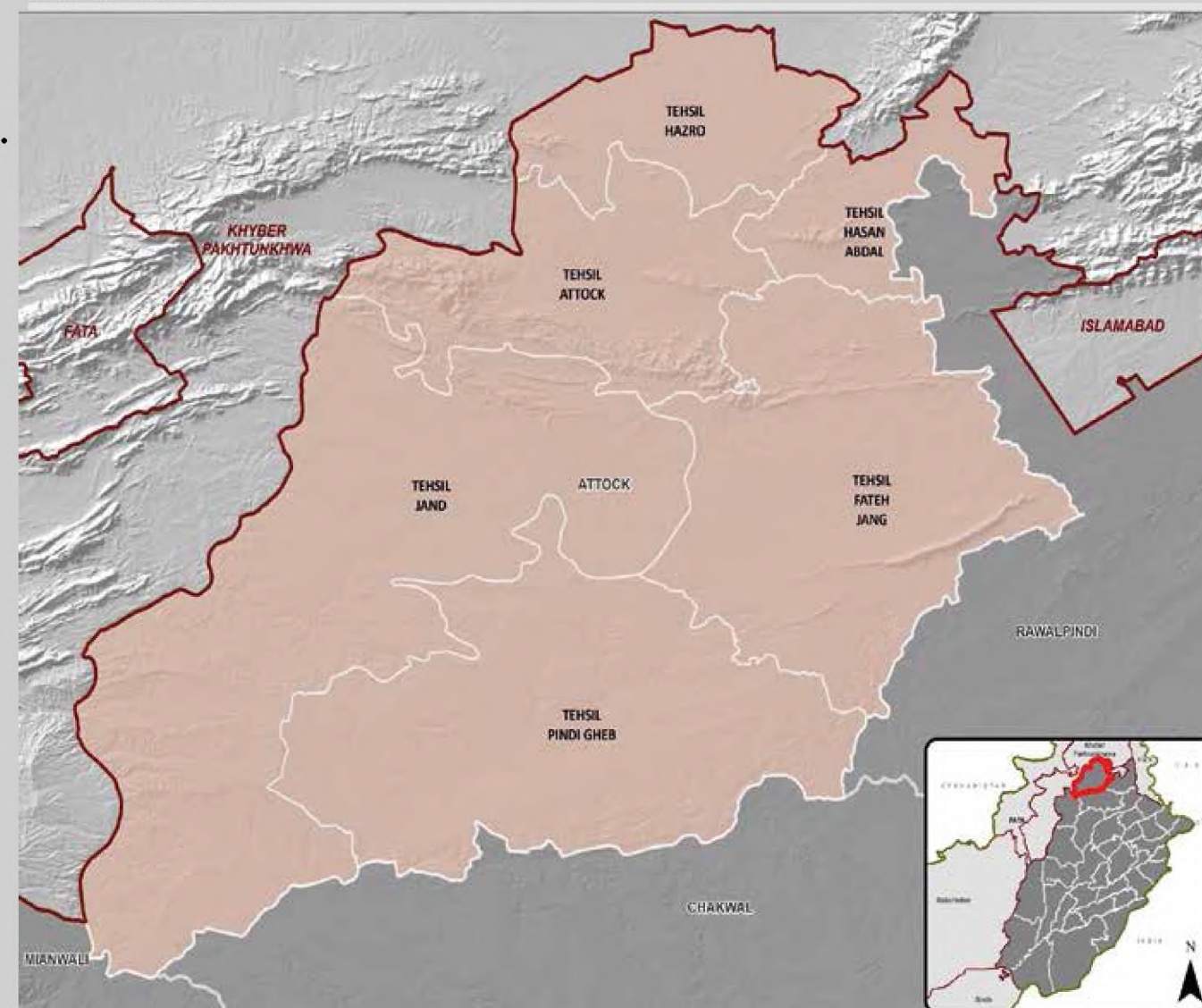
Parent Material	Limestone and sandstone bedrock, shallow and deep loamy soils in highlands and valleys
Dominant Soil Series	Missa, Guliana, Rajar, Balkassar, Ghazi
pH	7.4 – 8.1 (Average 7.79)
Electrical Conductivity (dSm⁻¹)	0.12 – 0.75 (Average 0.28)
Organic Matter (%)	0.17 – 0.91 (Average 0.54)
Available Phosphorus (ppm)	2 – 14 (Average 4.69)
Extractable Potassium (ppm)	52 – 210 (Average 98)
Farmers availing soil test facility (%)	34
Farmers availing water test facility (%)	13

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and the Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	235,357
Total Uncultivated Area (hectares)	373,196
Total Area under Irrigation (hectares)	29,495
Major Rabi Crop(s)	Wheat, Mustard
Major Kharif Crop(s)	Sorghum/Millet, Groundnut, Maize
Total Livestock Population	2,327,494

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

BAHAWALNAGAR

Bahawalnagar district is situated in the south-east of Punjab. Most of the land is agricultural along with some desert region, i.e. Cholistan. The climate of the district is that of a hot desert with hot summers and mild winters. Precipitation mostly occurs in the monsoon season from June to August. However, some of the precipitation also occurs from February to April. There are five tehsils in the district: Bahawalnagar, Haroonabad, Chishtian, Fort Abbas and Minchinabad. The district headquarter is located at Bahawalnagar.

SOIL ATTRIBUTES

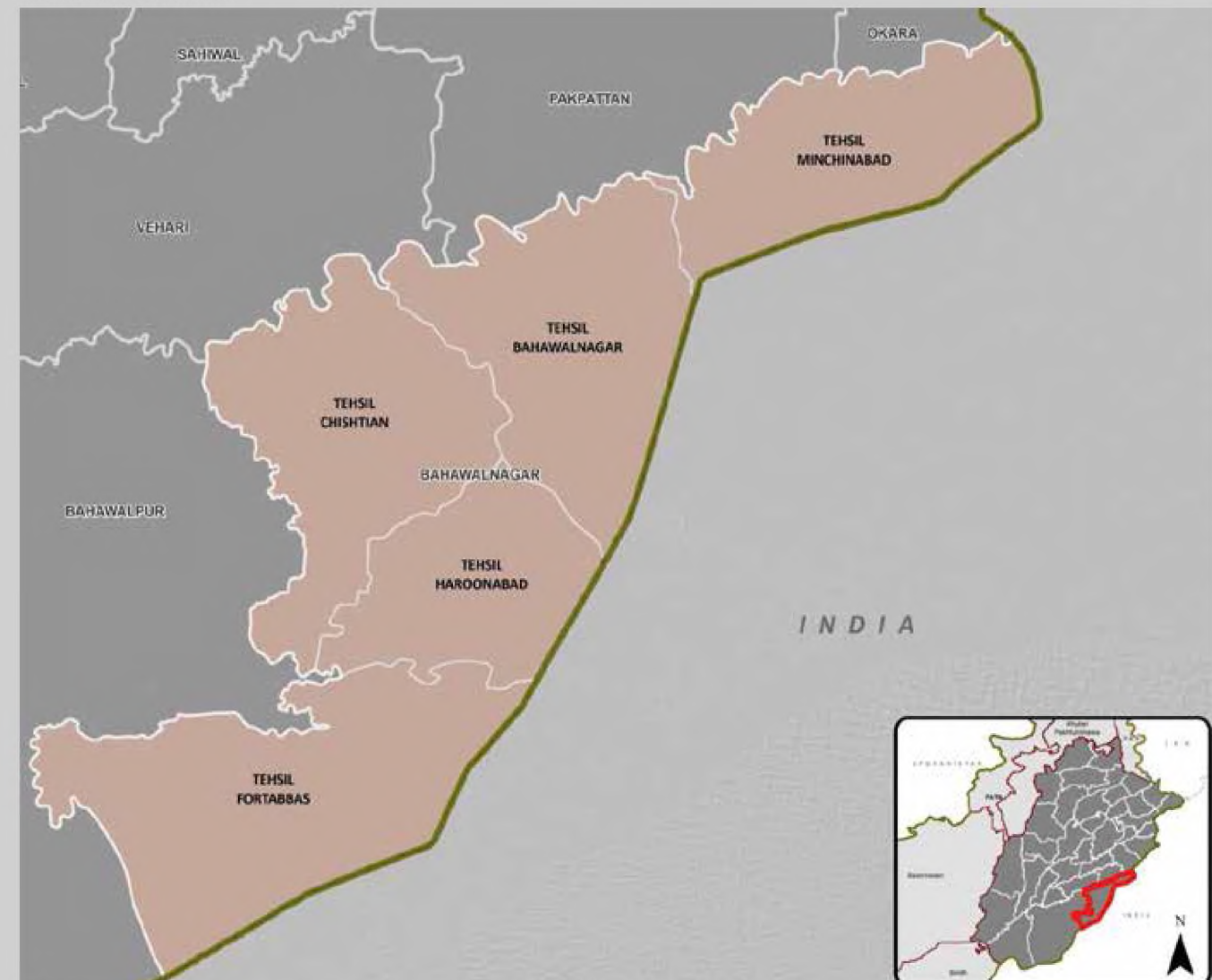
Parent Material	Mixed calcareous alluvium/ sand dunes
Dominant Soil Series	Yazman, Dheranwala, Lyallpur, Sultanpur, Awagat
pH	7.2 – 10.8 (Average 8.34)
Electrical Conductivity (dSm⁻¹)	0.1 – 24 (Average 0.84)
Organic Matter (%)	0.1 – 2.31 (Average 0.61)
Available Phosphorus (ppm)	1 – 43 (Average 5.89)
Extractable Potassium (ppm)	32 – 400 (Average 157)
Farmers availing soil test facility (%)	15
Farmers availing water test facility (%)	9

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	817,909
Total Uncultivated Area (hectares)	102,065
Total Area under Irrigation (hectares)	802,772
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Rice
Total Livestock Population	3,524,544

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

The landscape of the Bahawalpur district is diverse from irrigated to vast areas of deserts. Climate is with hot summers and mild winters. The main crops of the district are cotton, sugarcane, wheat, sunflower, rape/ mustard seeds and rice. Mango, dates and guava are some of the exports from this district. There are five tehsils in the district: Bahawalpur, Ahmedpur East, Hasilpur, Khairpur Tamewali and Yazman. Yazman is the largest tehsil that consists of the Cholistan desert area. The district headquarter is located at Bahawalpur.

SOIL ATTRIBUTES

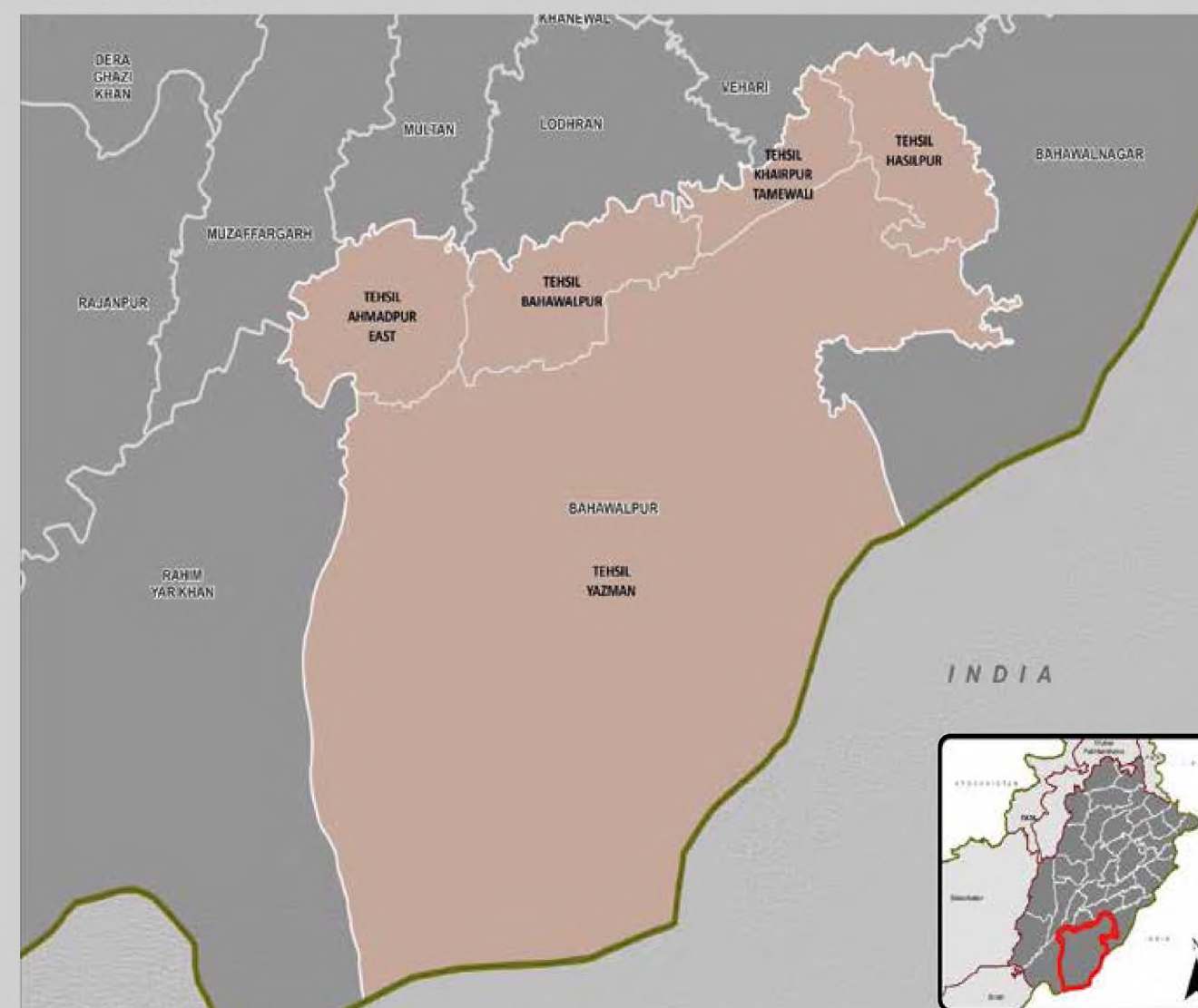
Parent Material	Mixed calcareous alluvium/sandy plains
Dominant Soil Series	Bahawalnagar, Cholistan, Dheranwala, Gambat, Harunabad
pH	7.4 – 11.2 (Average 8.30)
Electrical Conductivity (dSm⁻¹)	0.08 – 26.6 (Average 0.74)
Organic Matter (%)	0.1 – 2.3 (Average 0.50)
Available Phosphorus (ppm)	1 – 40 (Average 5.24)
Extractable Potassium (ppm)	26 – 400 (Average 159)
Farmers availing soil test facility (%)	15
Farmers availing water test facility (%)	12

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown	636,572
Total Uncultivated Area (hectares)	119,507
Total Area under Irrigation (hectares)	632,848
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Millets, Sunflower
Total Livestock Population	3,409,596

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

BHAKKAR

Bhakkar was declared as a district in 1981. The climate is hot and dry during the summer and moderately cold in the winter. Uninhabited plains of the Thal desert cover a vast area of the district. The riverine land along the Indus River is a fertile strip. There are four tehsils in the district: Bhakkar, Darya Khan, Kalurkot and Mankera. Bhakkar is also the district headquarter.

SOIL ATTRIBUTES

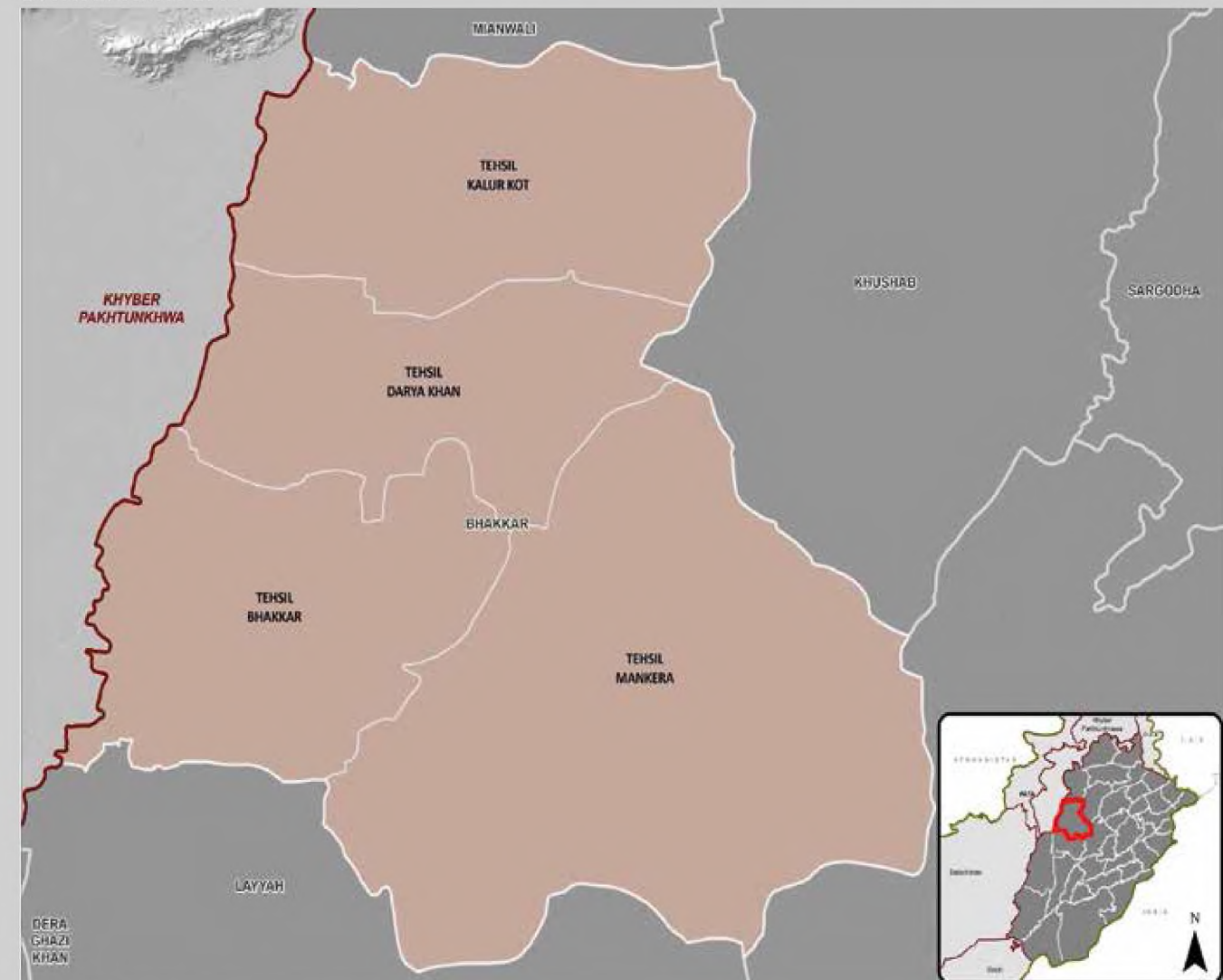
Parent Material	Rolling sand plains and fresh alluvium
Dominant Soil Series	Bhakkar, Banda, Bhutesar, Fazilpur, Saggu
pH	7.53 – 8.76 (Average 8.01)
Electrical Conductivity (dSm⁻¹)	0.1 – 0.83 (Average 0.24)
Organic Matter (%)	0.22 – 1.35 (Average 0.75)
Available Phosphorus (ppm)	2 – 10 (Average 4.15)
Extractable Potassium (ppm)	30 – 350 (Average 107)
Farmers availing soil test facility (%)	16
Farmers availing water test facility (%)	6

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	793,714
Total Uncultivated Area (hectares)	72,468
Total Area under Irrigation (hectares)	408,177
Major Rabi Crop(s)	Wheat, Gram
Major Kharif Crop(s)	Cotton, Millet
Total Livestock Population	3,028,861

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Chakwal district is situated in Pothwar plateau and Salt Range. Climate comprises of hot summers and cold winters. There is a large agriculture area that relies on rainfall. The topography is predominantly hilly, but also covered with forests in the southwest. In the north and northeast, there are leveled plains with some unfertile rocky patches. The southern portion extends to the Salt Range. There are five tehsils in the district: Chakwal, Kallar Kahar, Choa Saidan Shah, Talagang and Lawa. The district headquarter is located at Chakwal.

SOIL ATTRIBUTES

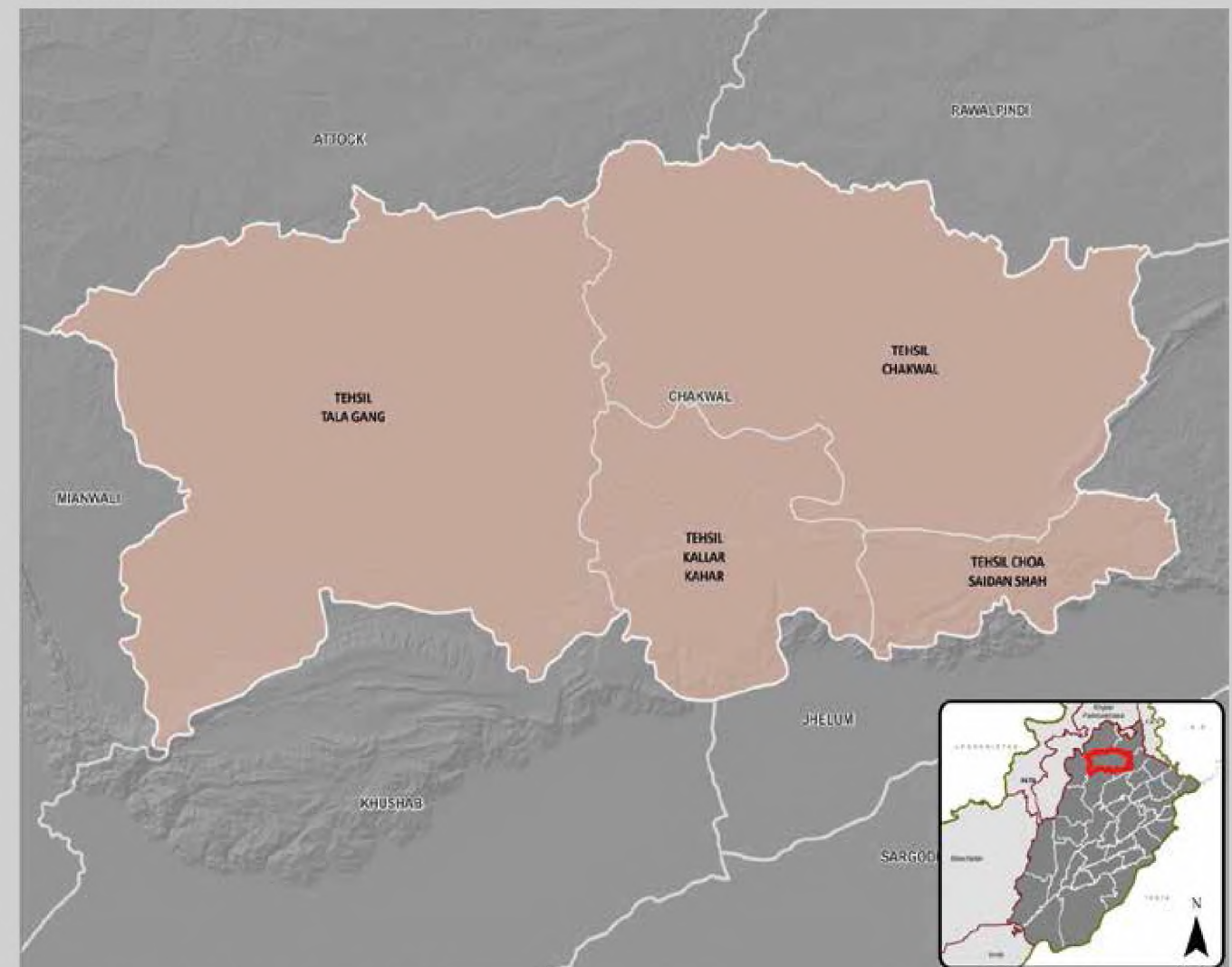
Parent Material	Moderately fine to fine textured, calcareous soils developed in late Pleistocene loess
Dominant Soil Series	Mial, Balkassar, Rajar, Namal
pH	7.6 – 8.6 (Average 8.01)
Electrical Conductivity (dSm⁻¹)	0.1 – 1.35 (Average 0.21)
Organic Matter (%)	0.16 – 1.18 (Average 0.75)
Available Phosphorus (ppm)	3 – 9 (Average 4.40)
Extractable Potassium (ppm)	60 – 210 (Average 117)
Farmers availing soil test facility (%)	33
Farmers availing water test facility (%)	36

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	262,583
Total Uncultivated Area (hectares)	349,986
Total Area under Irrigation (hectares)	15,441
Major Rabi Crop(s)	Wheat, Mustard
Major Kharif Crop(s)	Groundnut, Sorghum
Total Livestock Population	2,221,410

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

CHINIOT

Chiniot district is positioned between the heart of river Chenab and the heads of small rocky hills. Climate of the district comprises of hot summers and cold winters. The land is mostly fertile suitable for producing crops like wheat, rice, sugarcane, vegetables and fruits. Traditional wooden furniture from Chiniot is widely famous and exported worldwide. There are three tehsils in the district: Chiniot, Bhawana and Lalian. The district headquarter is located at Chiniot.

SOIL ATTRIBUTES

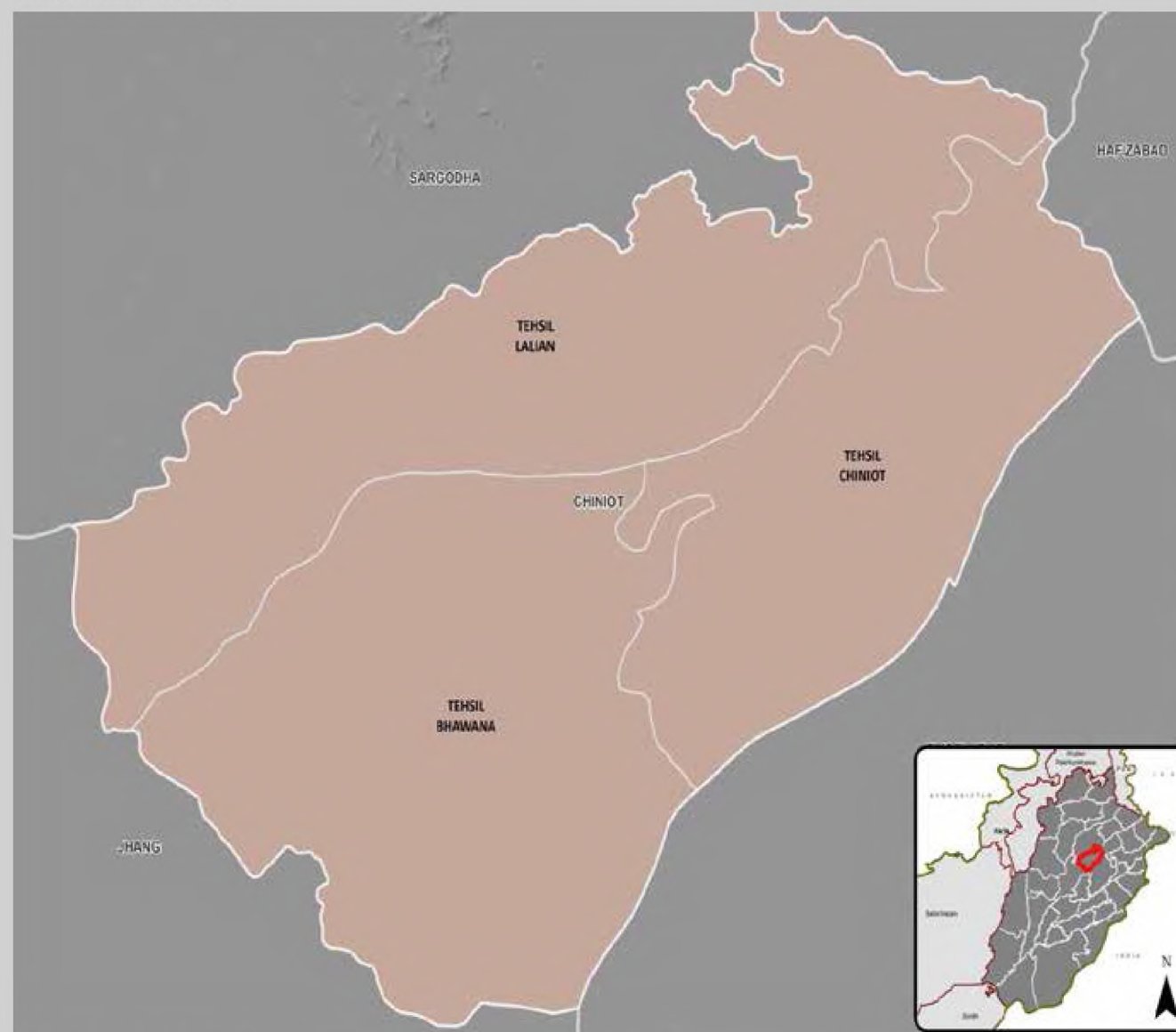
Parent Material	Mainly loamy and clayey soils of sub-recent river plains
Dominant Soil Series	Kasur, Lalian, Miani, Sultanpur, Shahpur
pH	7.41 – 9.53 (Average 8.06)
Electrical Conductivity (dSm⁻¹)	0.14 – 1.8 (Average 0.43)
Organic Matter (%)	0.1 – 1.05 (Average 0.61)
Available Phosphorus (ppm)	1.5 – 16 (Average 6.40)
Extractable Potassium (ppm)	56 – 400 (Average 141)
Farmers availing soil test facility (%)	26
Farmers availing water test facility (%)	16

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	305,895
Total Uncultivated Area (hectares)	64,041
Total Area under Irrigation (hectares)	305,736
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Maize, Sugarcane

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Dera Ghazi Khan district is located at the foot hills of Suleiman Mountain Range. The climate is hot and dry during the summer and moderately cold in the winter. Occasional heavy rainfall causes flooding in the region. Hill-torrent irrigation is practiced in the western part of the district. It also includes a hill station, Fort Munro located at a height of 1,972 meters above sea level. The district headquarter is located at Dera Ghazi Khan.

SOIL ATTRIBUTES

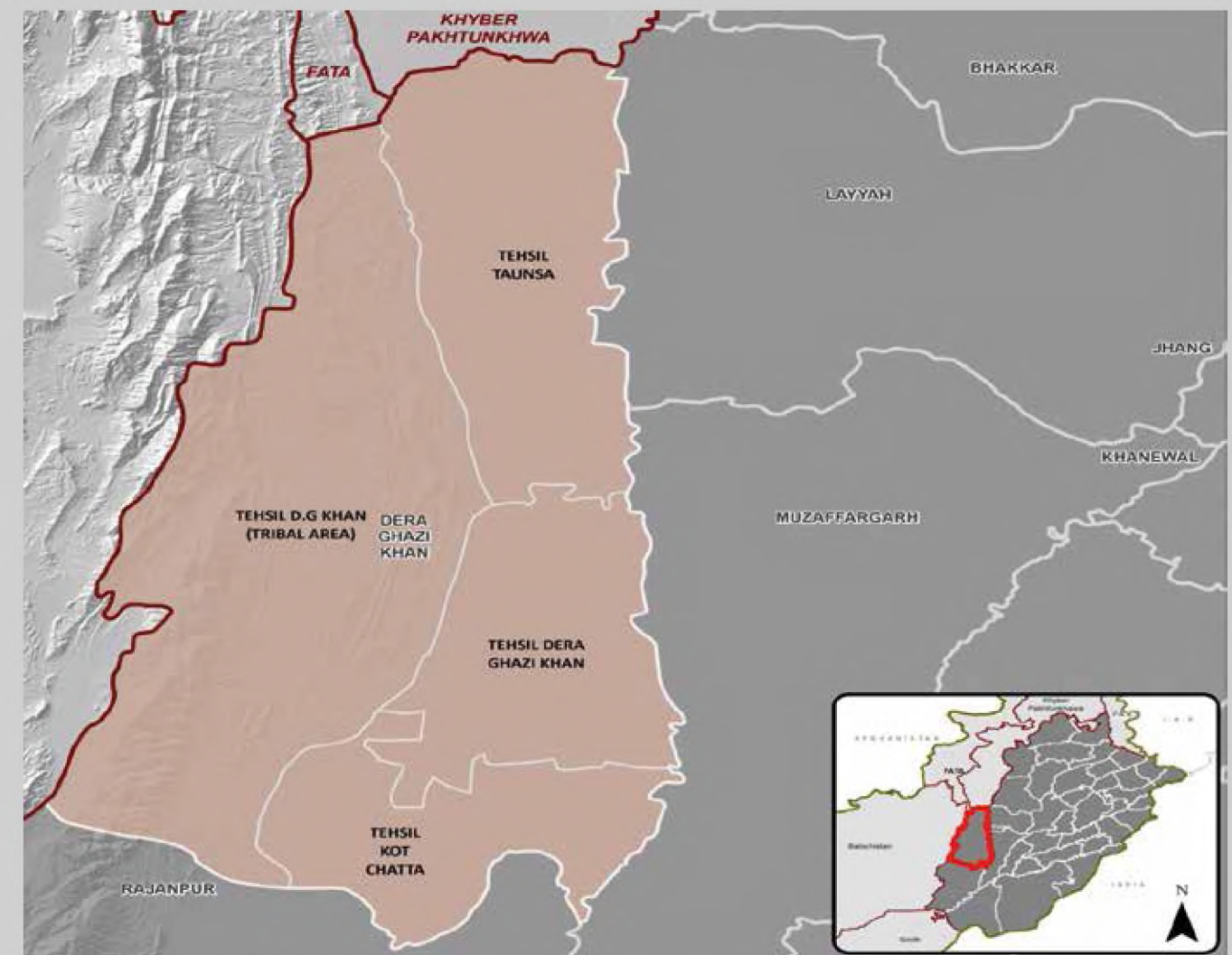
Parent Material	Mixed calcareous alluvium of piedmont plain
Dominant Soil Series	Shahdara, Jhatpat, Kandhkot, Kahrur, Kashmore
pH	7.3 – 10.8 (Average 8.31)
Electrical Conductivity (dSm⁻¹)	0.026 – 36 (Average 0.92)
Organic Matter (%)	0.1 – 2.19 (Average 0.54)
Available Phosphorus (ppm)	1 – 52 (Average 5.20)
Extractable Potassium (ppm)	26 – 400 (Average 174)
Farmers availing soil test facility (%)	18
Farmers availing water test facility (%)	18

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	356,036
Total Uncultivated Area (hectares)	225,316
Total Area under Irrigation (hectares)	323,731
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Rice, Sugarcane
Total Livestock Population	3,313,927

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

FAISALABAD

Faisalabad, the third largest city of Pakistan, is situated in the central Punjab. Climate of the district comprises of hot summers and cold winters. This district is the hub of agricultural research and has the biggest cotton market in Asia. The district is home to numerous textile, sugar and flour mills. There are six tehsils in the district: Faisalabad City, Faisalabad Saddar, Jaranwala, Chak Jhumra, Samundri and Tandlianwala. The district headquarter is situated at Faisalabad.

SOIL ATTRIBUTES

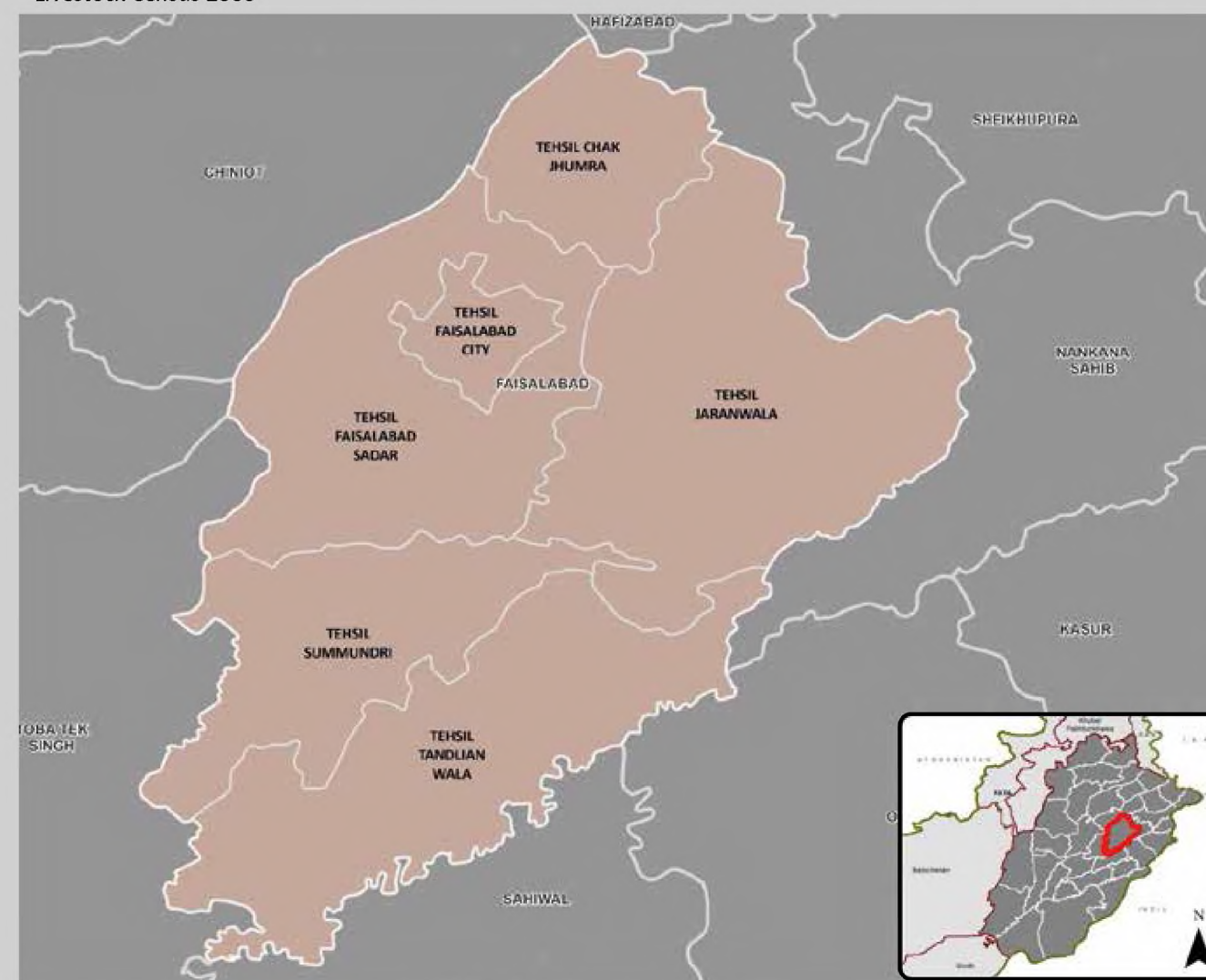
Parent Material	The soils formed in a river terrace; the alluvial deposits of Chenab and Ravi rivers
Dominant Soil Series	Hafizabad, Lyallpur, Sultanpur, Sindhelianwali, Khurianwala
pH	6.67 – 10.2 (Average 8.26)
Electrical Conductivity (dSm⁻¹)	0.1 – 10 (Average 0.55)
Organic Matter (%)	0.12 – 2.1 (Average 0.57)
Available Phosphorus (ppm)	1 – 19 (Average 5.82)
Extractable Potassium (ppm)	38 – 400 (Average 153)
Farmers availing soil test facility (%)	27
Farmers availing water test facility (%)	18

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	698,489
Total Uncultivated Area (hectares)	111,261
Total Area under Irrigation (hectares)	698,362
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Sugarcane, Rice, Maize
Total Livestock Population	3,604,315

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Gujranwala district lies on the Grand Trunk (GT) road built by Emperor Sher Shah Suri in the 16th century. Climate of the district comprises of hot summers and cold winters. The main crops include wheat, rice, sugarcane, vegetables and fodder. The district has several commercial and industrial centers for the manufacturing of ceramics, metal tools, leather, utensils, fans, textiles etc. There are four tehsils in the district: Gujranwala, Kamoke, Nowshera Virkan and Wazirabad. The district headquarter is located at Gujranwala.

SOIL ATTRIBUTES

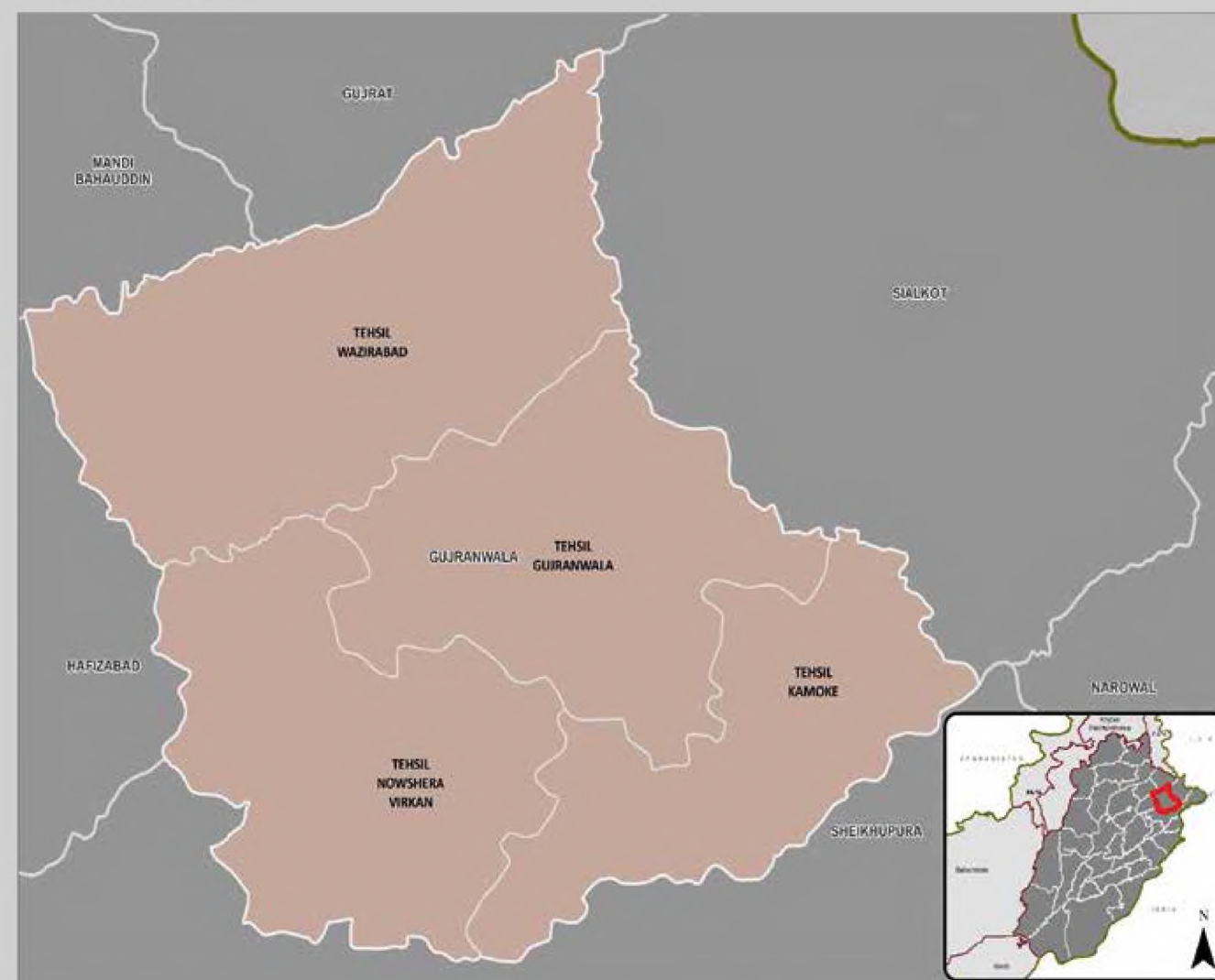
Parent Material	Mainly mixed calcareous alluvium
Dominant Soil Series	Bhalwal, Hafizabad, Lyallpur, Eminabad, Gujranwala
pH	7 – 10.7 (Average 8.12)
Electrical Conductivity (dSm⁻¹)	0.1 – 8.19 (Average 0.28)
Organic Matter (%)	0.1 – 1.69 (Average 0.55)
Available Phosphorus (ppm)	1 – 27 (Average 5.85)
Extractable Potassium (ppm)	34 – 400 (Average 156)
Farmers availing soil test facility (%)	72
Farmers availing water test facility (%)	12

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	550,700
Total Uncultivated Area (hectares)	52,375
Total Area under Irrigation (hectares)	548,455
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane
Total Livestock Population	1,893,449

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

GUJRAT

Gujrat is an old district located between the two famous rivers, Jhelum and Chenab. However, shortage of irrigation water is a big problem; only 56% of the cultivated area is irrigated and crops on the remaining area depend on rainfall. The climate of the district is hot and dry during the summer and moderately cold in the winter. The land is suitable for cultivation of rice and sugarcane. In addition to agriculture, Gujrat is known for farm industry, traditional pottery and wooden furniture. There are three tehsils in the district: Gujrat, Kharian and Sarai Alamgir. The district headquarter is situated at Gujrat.

SOIL ATTRIBUTES

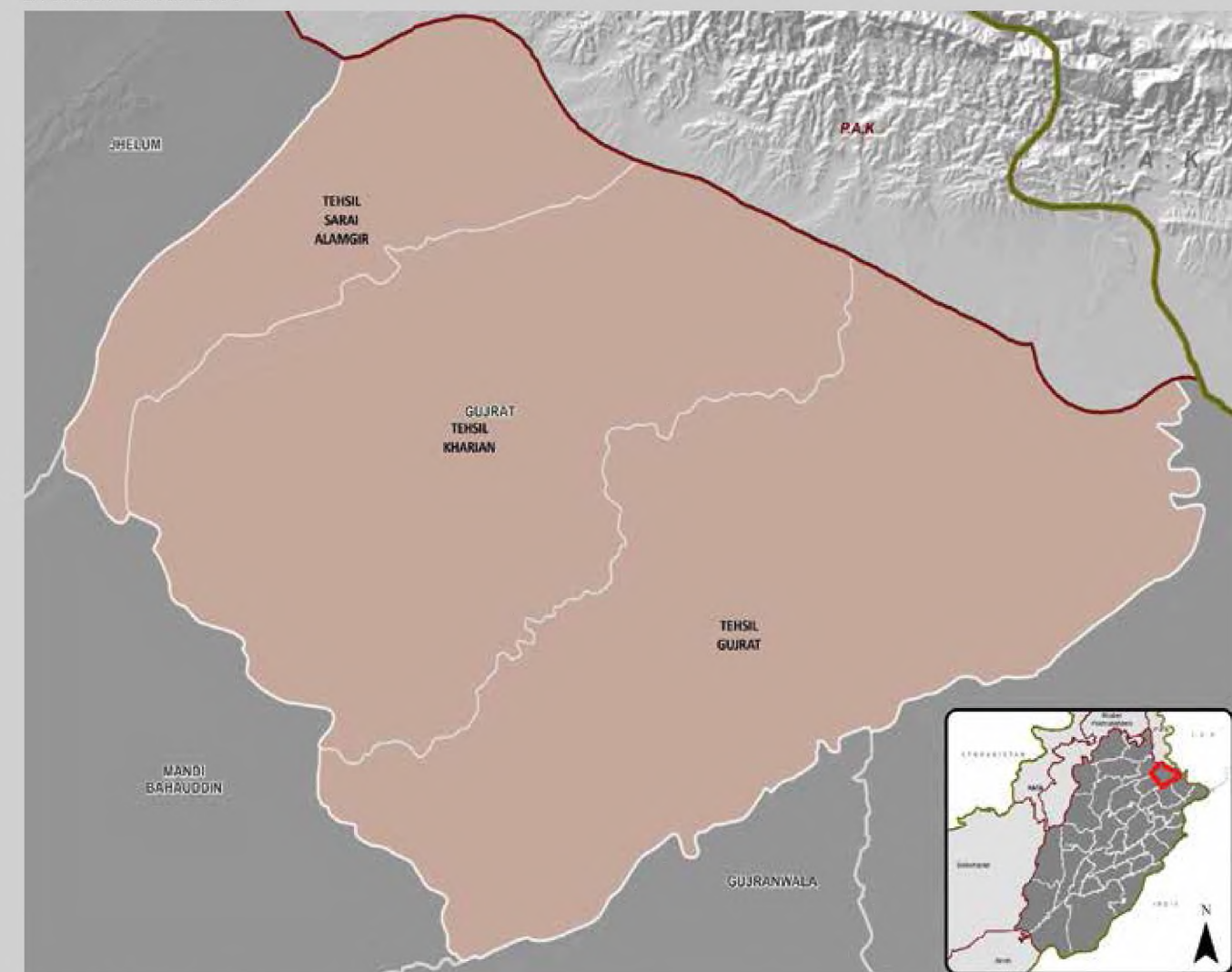
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Gujranwala, Pindorian, Lyallpur, Bhalwal, Shahdara
pH	7.0 – 9.9 (Average 7.99)
Electrical Conductivity (dSm⁻¹)	0.1 – 2.2 (Average 0.31)
Organic Matter (%)	0.27 – 1.59 (Average 0.72)
Available Phosphorus (ppm)	3 – 30 (Average 6.24)
Extractable Potassium (ppm)	40 – 350 (Average 147)
Farmers availing soil test facility (%)	57
Farmers availing water test facility (%)	45

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	299,120
Total Uncultivated Area (hectares)	72,305
Total Area under Irrigation (hectares)	168,572
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane
Total Livestock Population	1,165,111

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Hafizabad is situated in central Punjab and known for its rice production. The climate of the district is hot and dry during the summer and moderately cold in the winter. Due to the proximity of the hills, there is more rainfall in the east than the western part. There are two tehsils in the Hafizabad district: Hafizabad and Pindi Bhattian. The district headquarter is situated at Hafizabad.

SOIL ATTRIBUTES

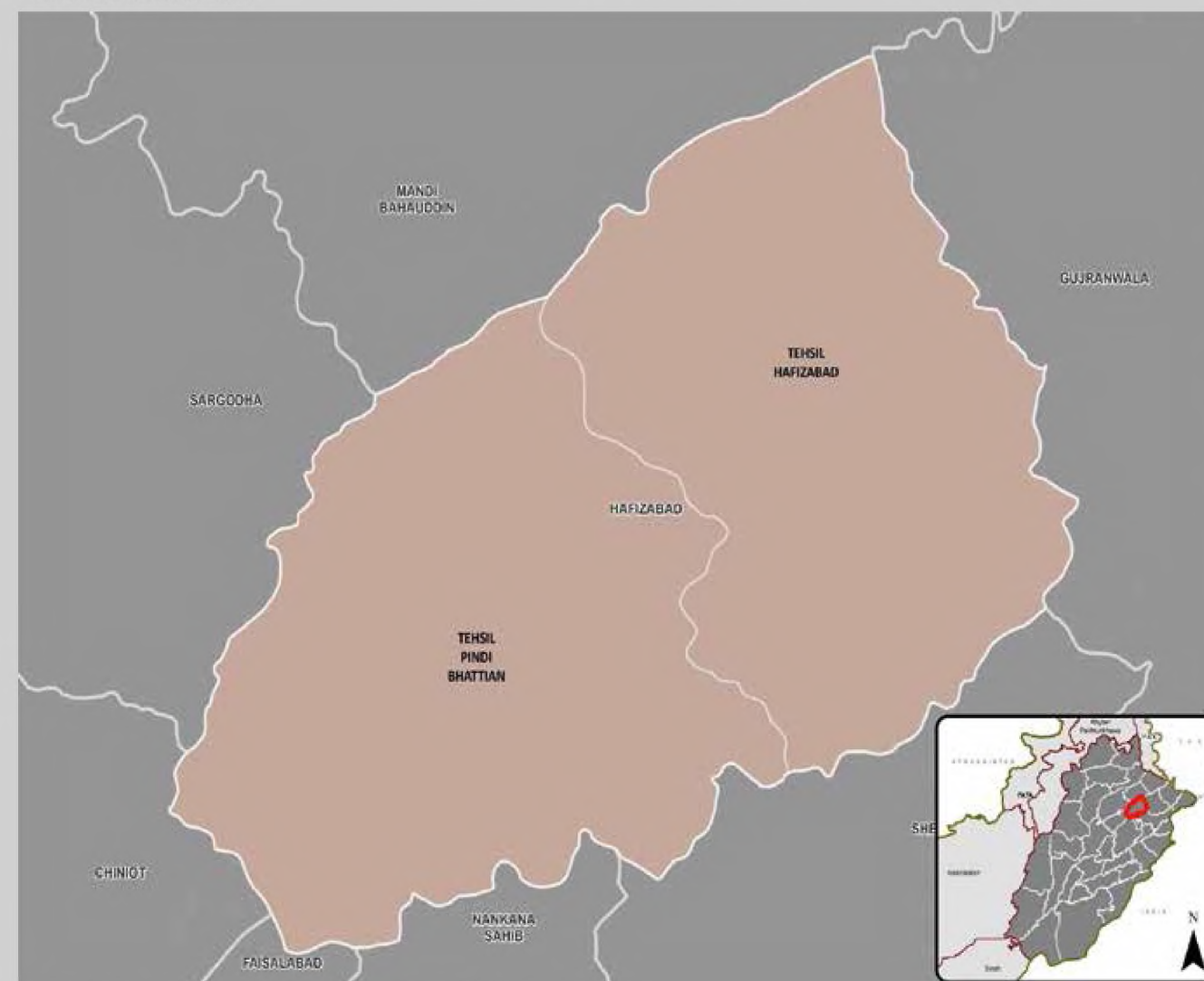
Parent Material	Mainly loamy and clayey alluvium
Dominant Soil Series	Eminabad, Hafizabad, Pindorian, Wazirabad, Kamunki
pH	7.2 – 11.0 (Average 8.32)
Electrical Conductivity (dSm⁻¹)	0.1 – 6.3 (Average 0.43)
Organic Matter (%)	0.1 – 1.78 (Average 0.57)
Available Phosphorus (ppm)	1 – 17 (Average 6.07)
Extractable Potassium (ppm)	42 – 400 (Average 148)
Farmers availing soil test facility (%)	16
Farmers availing water test facility (%)	12

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	347,610
Total Uncultivated Area (hectares)	45,835
Total Area under Irrigation (hectares)	347,463
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane
Total Livestock Population	1,324,420

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

JHANG

Jhang is one of the oldest districts of Punjab. The district is mainly bordered by Chiniot, Sargodha, Khushab, Layyah, Toba Tek Singh and Khanewal districts. The climate is hot and dry during the summer and moderately cold in the winter. Most of the land is suitable for cultivation except areas having salinity/sodicity problem. There are three tehsils in the district: Jhang, Shorkot and Ahmedpur Sial. The district headquarter is situated at Jhang.

SOIL ATTRIBUTES

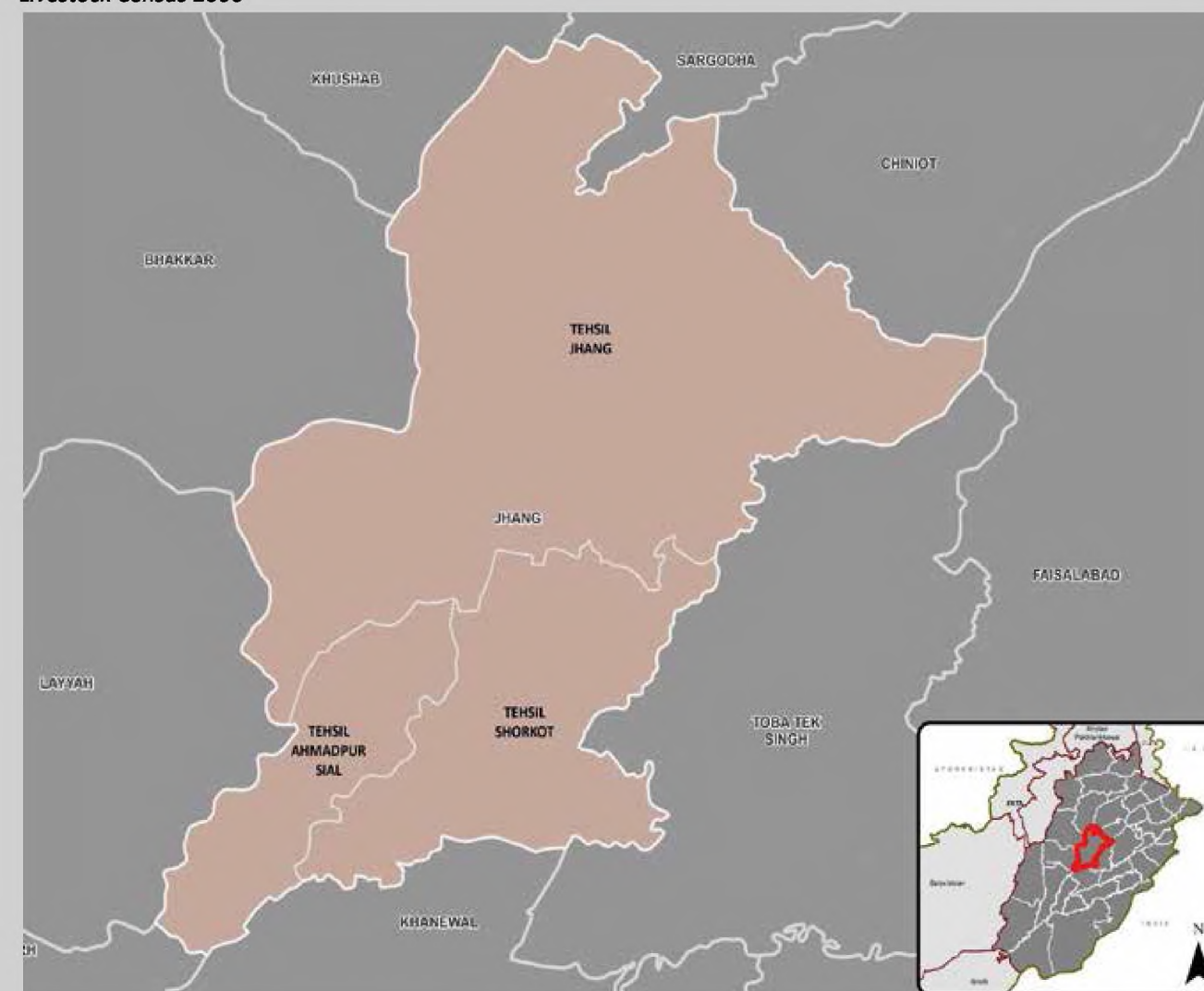
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Hafizabad, Jhakkar, Khurrianwala, Shahpur, Sultanpur
pH	7.6 – 9.9 (Average 8.35)
Electrical Conductivity (dSm⁻¹)	0.1 – 4.4 (Average 0.54)
Organic Matter (%)	0.1 – 1.4 (Average 0.62)
Available Phosphorus (ppm)	1 – 16 (Average 5.85)
Extractable Potassium (ppm)	28 – 400 (Average 138)
Farmers availing soil test facility (%)	61
Farmers availing water test facility (%)	54

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	685,371
Total Uncultivated Area (hectares)	131,888
Total Area under Irrigation (hectares)	606,541
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane, Maize
Total Livestock Population	5,062,387

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Jhelum district lies in the north east of Punjab. The Jhelum River crosses the district through the eastern and southern parts. The climate comprises of hot summers and cold winters. The riverine soil is mostly plain, alluvial and quite fertile. Khewra salt mines, one of the largest salt mines in the world, and the famous historical Rohtas Fort are located in this district. There are four tehsils in the district: Jhelum, Sohawa, Pind Dadan Khan and Dina. The district headquarter is situated at Jhelum.

SOIL ATTRIBUTES

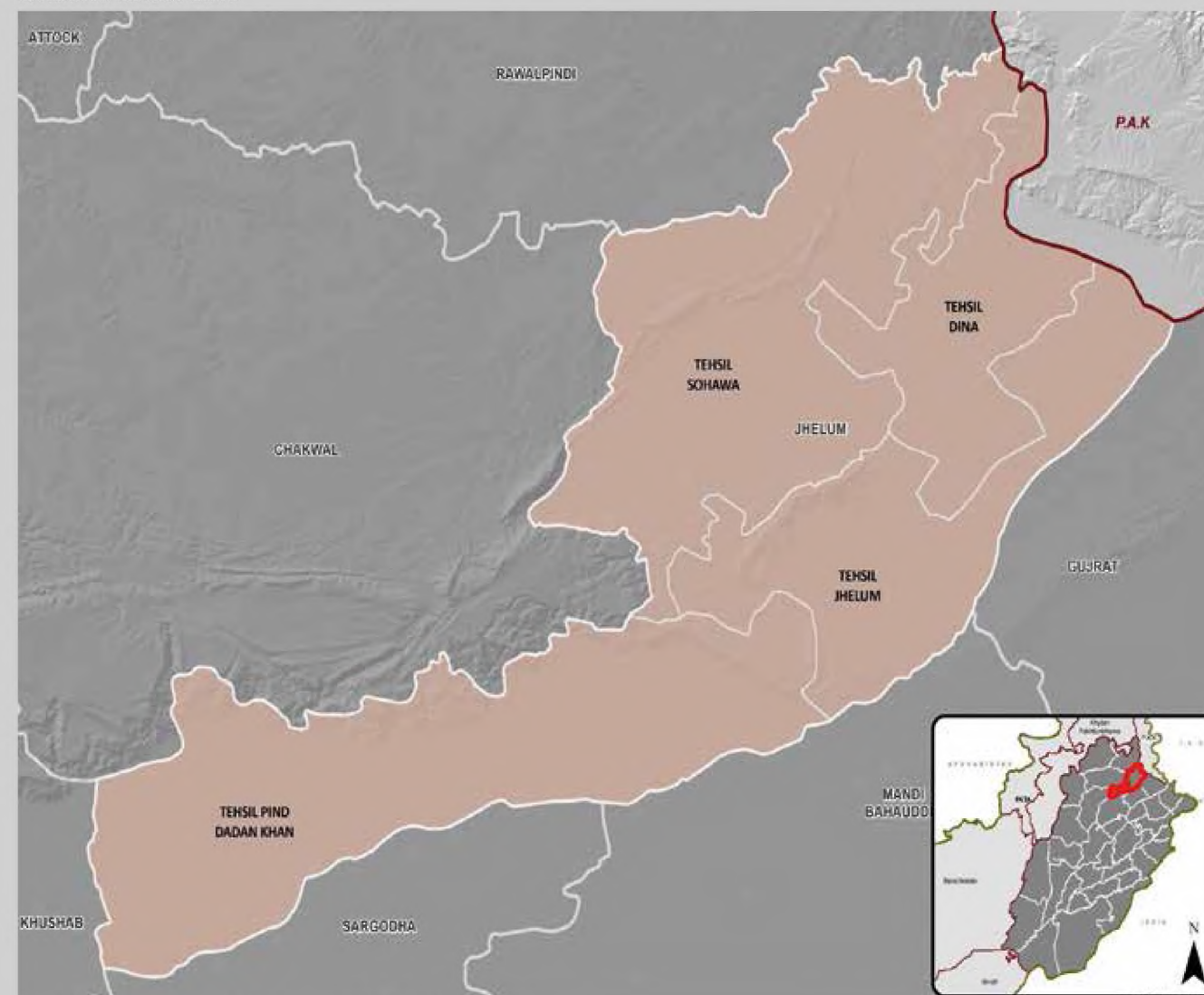
Parent Material	Diverse in nature consisting of loess and alluvium
Dominant Soil Series	Balkassar, Chakwal, Dhumman, Kahuta, Missa
pH	7.3 – 10.1 (Average 8.52)
Electrical Conductivity (dSm⁻¹)	0.1 – 15 (Average 0.88)
Organic Matter (%)	0.1 – 1.8 (Average 0.61)
Available Phosphorus (ppm)	1 – 25 (Average 4.33)
Extractable Potassium (ppm)	30 – 340 (Average 118)
Farmers availing soil test facility (%)	30
Farmers availing water test facility (%)	18

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	105,689
Total Uncultivated Area (hectares)	232,329
Total Area under Irrigation (hectares)	35,338
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Maize, Millet, Rice
Total Livestock Population	1,043,115

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

KASUR

Kasur district represents mixed cropping zone of Punjab. It is surrounded by Lahore in the north, Okara in the south and Nankana Sahib in the northwest. Climate of the district comprises of hot summers and cold winters. The main crops are wheat, rice, cotton, maize, sugarcane and vegetables. Famous Sufi poet Baba Bulleh Shah was born in the Kasur city. There are four tehsils: Kasur, Chunian, Kot Radha Kishen and Pattoki. The district headquarter is situated at Kasur.

SOIL ATTRIBUTES

Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Bhalwal, Sultanpur, Khurrianwala, Gujranwala, Pindorian
pH	7.1 – 11 (Average 8.14)
Electrical Conductivity (dSm⁻¹)	0.1 – 20.5 (Average 0.76)
Organic Matter (%)	0.1 – 2.9 (Average 0.79)
Available Phosphorus (ppm)	1 – 52 (Average 8.02)
Extractable Potassium (ppm)	25 – 400 (Average 150)
Farmers availing soil test facility (%)	43
Farmers availing water test facility (%)	23

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	520,711
Total Uncultivated Area (hectares)	79,213
Total Area under Irrigation (hectares)	520,383
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Maize, Sugarcane
Total Livestock Population	2,701,658

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Khanewal was given the status of district in 1985 by combining two tehsils of Multan district. Climate of the district comprises of hot summers and cold winters. The main crops include wheat, cotton, sugarcane, vegetables and fruits. The district has the second largest railway station in the country, known as the Khanewal Junction. There are four tehsils in the district: Khanewal, Jahanian, Kabirwala and Mian Channu. The district headquarter is situated at Khanewal city.

SOIL ATTRIBUTES

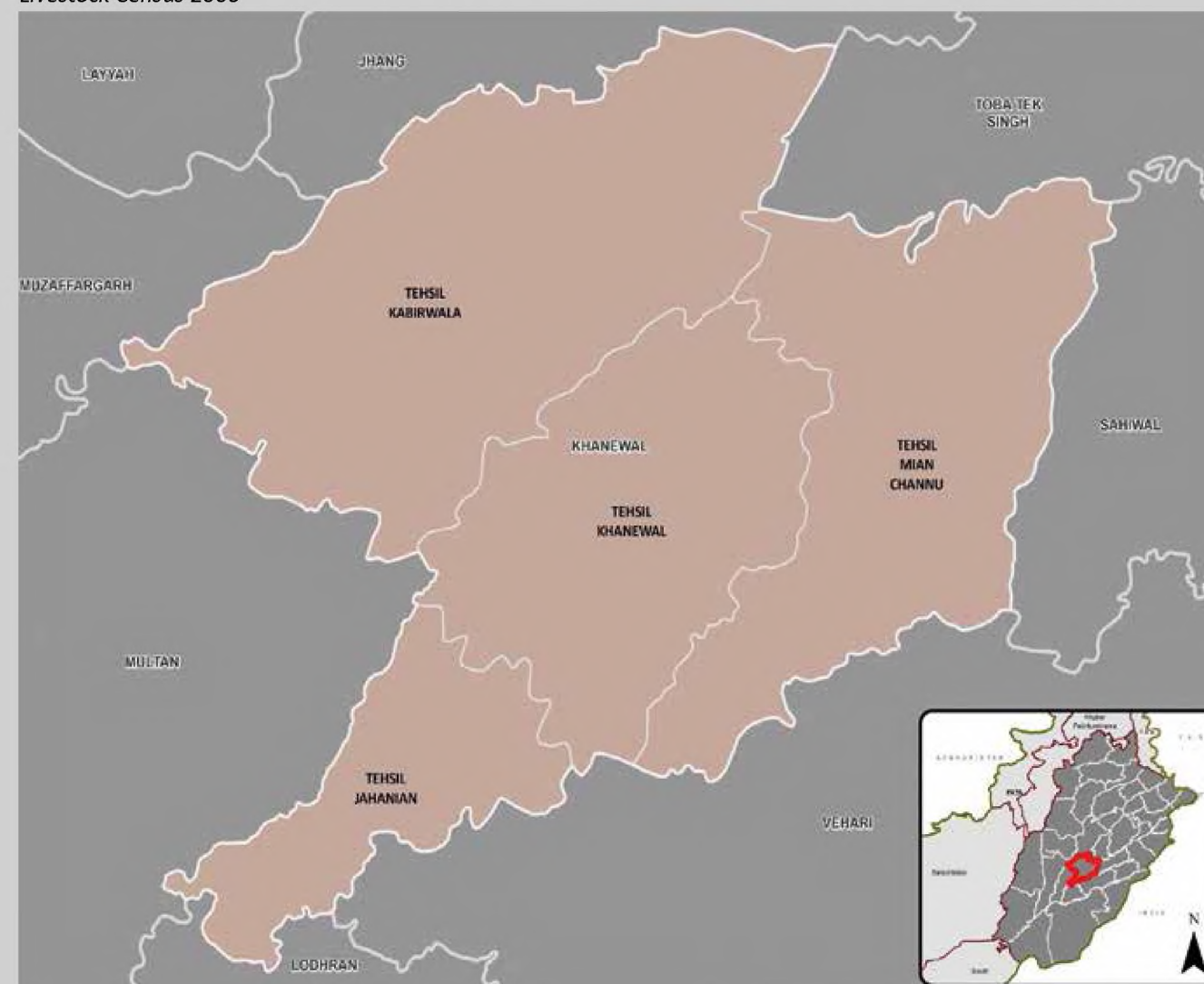
Parent Material	Mixed loamy and clayey material
Dominant Soil Series	Shahdara, Bhalike, Pacca, Gajiana, Rustam
pH	7.4 – 10.7 (Average 8.41)
Electrical Conductivity (dSm⁻¹)	0.1 – 19.5 (Average 0.62)
Organic Matter (%)	0.1 – 2.8 (Average 0.75)
Available Phosphorus (ppm)	1 – 44 (Average 5.92)
Extractable Potassium (ppm)	28 – 400 (Average 155)
Farmers availing soil test facility (%)	45%
Farmers availing water test facility (%)	24%

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Services Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	572,853
Total Uncultivated Area (hectares)	60,439
Total Area under Irrigation (hectares)	570,545
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Sugarcane
Total Livestock Population	2,714,703

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

KHUSHAB

Khushab district is bounded in the north by salt range and in the east by Jhelum River. The climate is extreme with long hot summers and cold dry winters. The district has diverse landscape features that vary from mountains, deserts to lush green lands. Soon Sakasir valley, one of the beautiful hill stations of Pakistan, lies in Khushab. The district is abundant in natural resources like salt and coal. There are four tehsils in the district: Khushab, Quaidabad, Noorpur Thal and Naushera. The district headquarter is situated at Jauharabad.

SOIL ATTRIBUTES

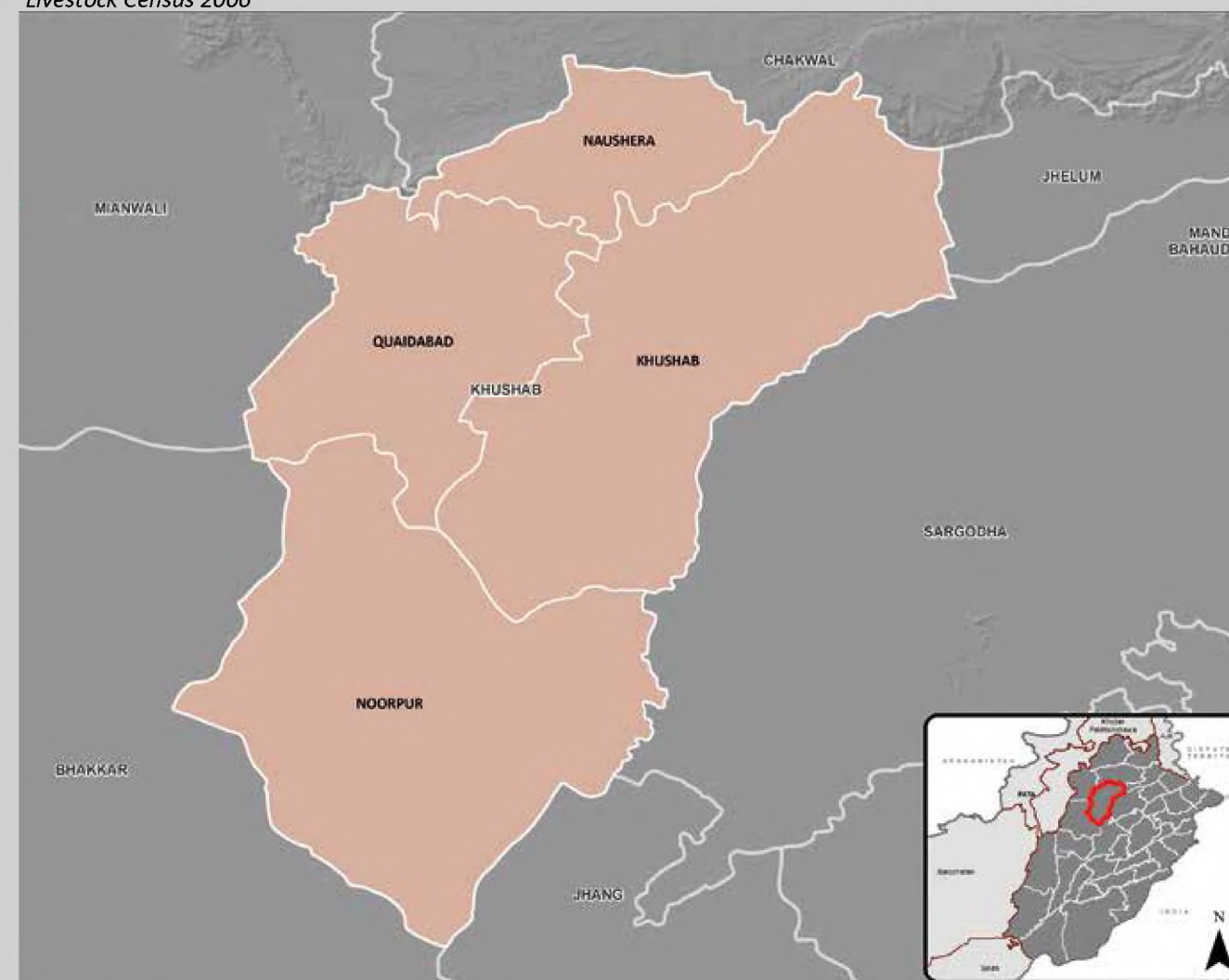
Parent Material	Rolling sand plains, mixed alluvium of river and piedmont plain
Dominant Soil Series	Bhakkar, Bhareri, Firoz, Gandhra, Missa
pH	7.4 – 8.7 (Average 8.06)
Electrical conductivity (dSm⁻¹)	0.1 – 3.1 (Average 0.54)
Organic Matter (%)	0.2 – 1.7 (Average 0.85)
Available Phosphorus (ppm)	1 – 15 (Average 4.86)
Extractable Potassium (ppm)	40 – 360 (Average 154)
Farmers availing soil test facility (%)	27
Farmers availing water test facility (%)	27

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	430,159
Total Uncultivated Area (hectares)	185,840
Total Area under Irrigation (hectares)	143,966
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Coarse grains, Rice
Total Livestock Population	1,864,563

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Lahore is the most densely populated district of Punjab. Climate of the district comprises of hot summers and cold winters. Lahore, the 2nd largest city of Pakistan, is the provincial capital that has historical landmarks like Badshahi Mosque, Lahore Fort and Shalimar Garden. The city is referred to as the cultural heart of Pakistan and hosts most of the arts, cuisine, festivals, music, gardening and intelligentsia of the country.

SOIL ATTRIBUTES

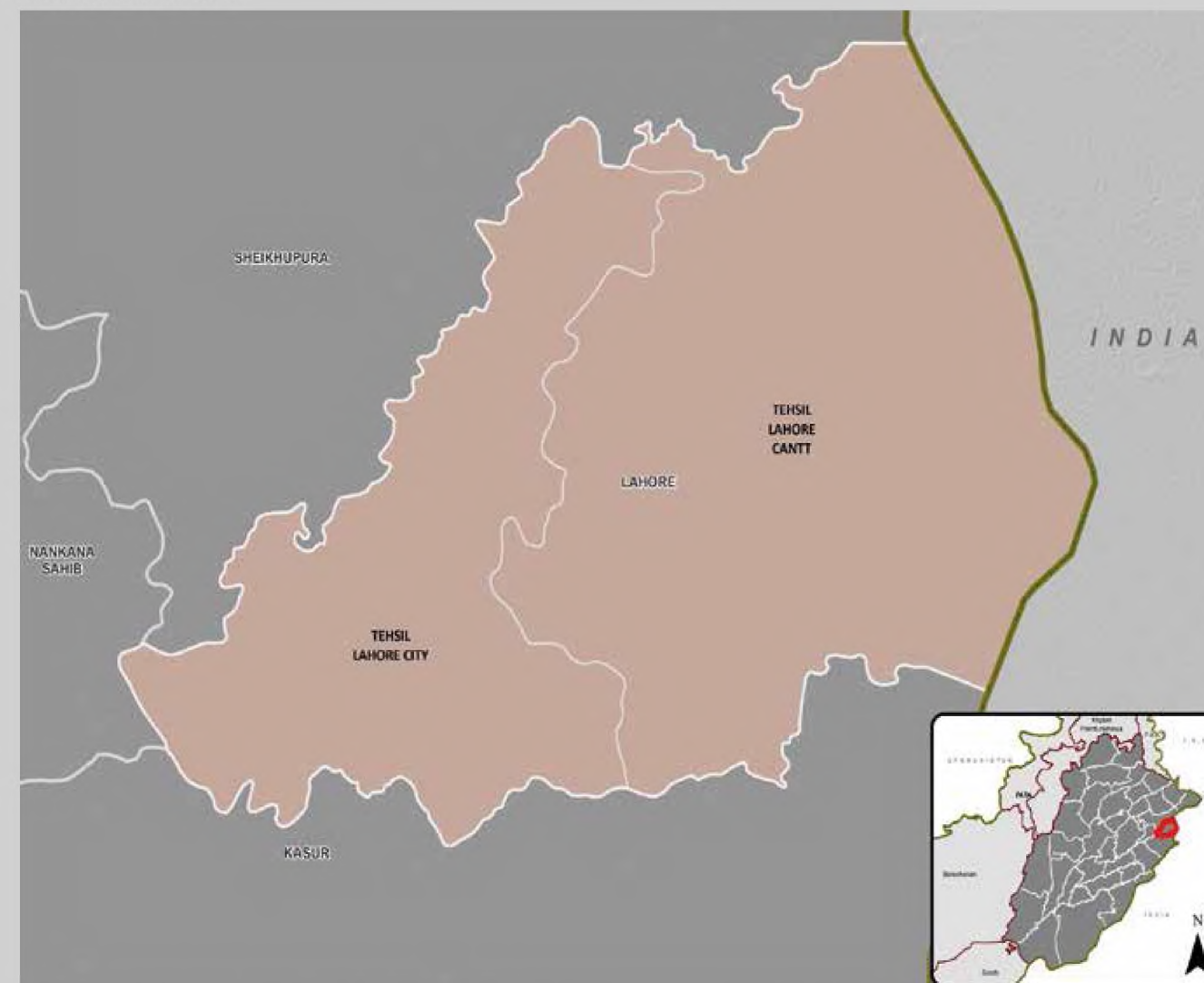
Parent Material	Mixed calcareous alluvium
Soil Series	Bhalwal, Hafizabad, Lyallpur, Khurrianwala, Gujranwala
pH	7.0 – 10.3 (Average 8.33)
Electrical Conductivity (dSm⁻¹)	0.1 – 22.7 (Average 0.69)
Organic Matter (%)	0.1-2.89 (Average 0.80)
Available Phosphorus (ppm)	1-50 (Average 6.66)
Extractable Potassium (ppm)	25 – 400 (Average 152)
Farmers availing soil test facility (%)	20
Farmers availing water test facility (%)	20

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	171,741
Total Uncultivated Area (hectares)	51,160
Total Area under Irrigation (hectares)	168,623
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Maize, Potato, Rice
Total Livestock Population	1,028,780

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

LAYYAH

Layyah district located in the western part of Punjab consists of a semi-rectangular block of sandy land between the Indus River and the Chenab River in the Thal Doab. The climate is extreme with long hot summers and cold dry winters. The main crops are sugarcane, wheat, cotton, gram and guar seed. There are three tehsils in the district: Layyah, Choubara and Karor Lal Esan. The district headquarter is at Layyah.

SOIL ATTRIBUTES

Parent Material	Rolling sand plains and fresh alluvium
Dominant Soil Series	Bhakkar, Banda, Bhutesar, Fazilpur, Shahdara
pH	7.6 – 10.3 (Average 8.23)
Electrical Conductivity (dSm⁻¹)	0.1 – 7.9 (Average 0.43)
Organic Matter (%)	0.1 – 1.6 (Average 0.48)
Available Phosphorus (ppm)	1 – 25 (Average 4.44)
Extractable Potassium (ppm)	26 – 380 (Average 110)
Farmers availing soil test facility (%)	34
Farmers availing water test facility (%)	31

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares) 513,790

Total Uncultivated Area (hectares) 153,922

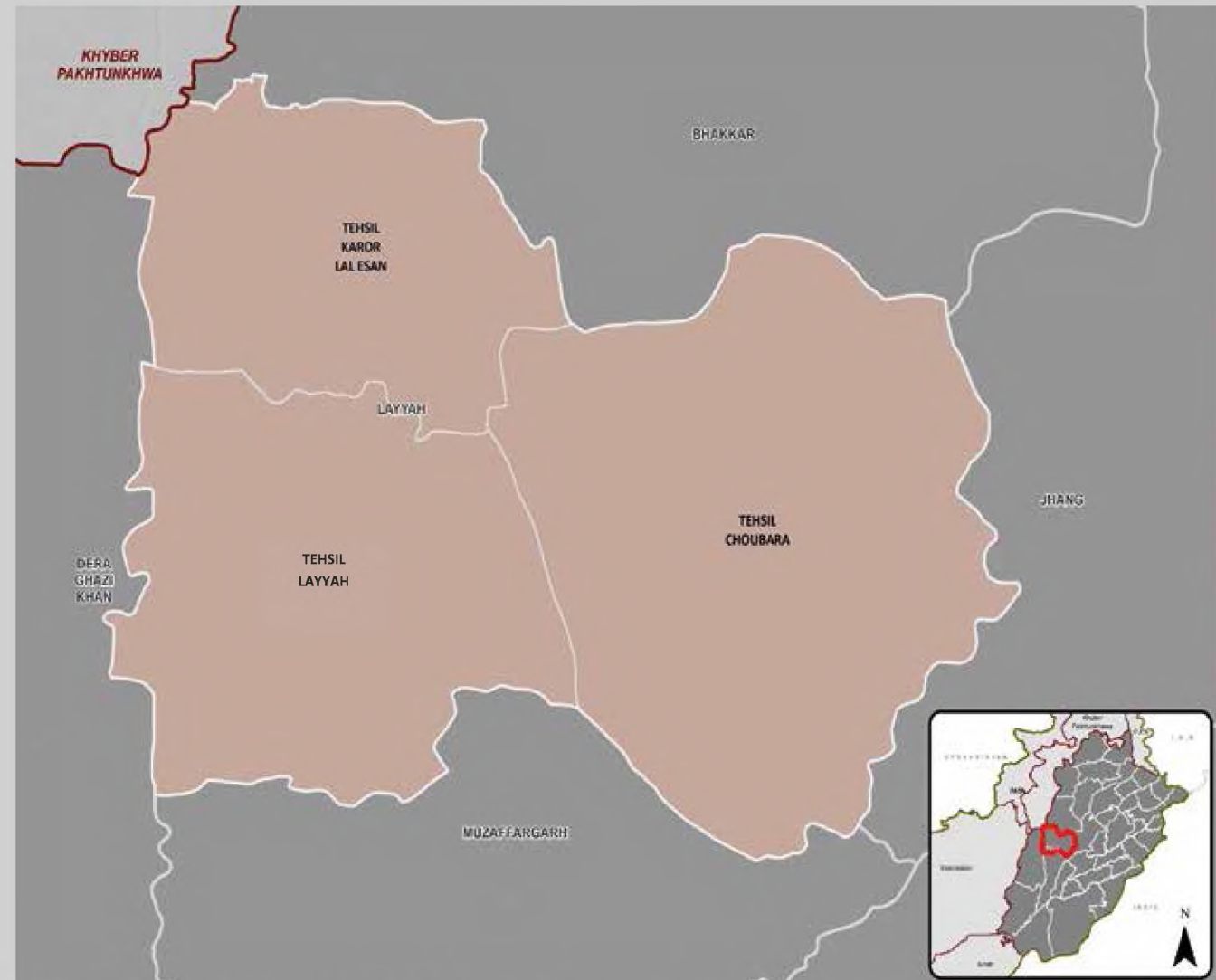
Total Area under Irrigation (hectares) 437,159

Major Rabi Crop(s) Wheat, Gram

Major Kharif Crops(s) Cotton, Sugarcane

Total Livestock Population 2,948,752

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Lodhran district is situated on the northern side of river Sutlej. The entire district is a smooth plain. Hot and dry weather prevails during summer and cold during the winter. Major crops of the district include wheat and cotton while minor crops include rice, sunflower, sugarcane and tobacco. The groundwater in Dunyapur area is predominantly brackish, while that in Kahrora Pacca and Lodhran is sweet. There are three tehsils in the district: Lodhran, Kahrora Pacca and Dunyapur. The district headquarter is located at Lodhran city.

SOIL ATTRIBUTES

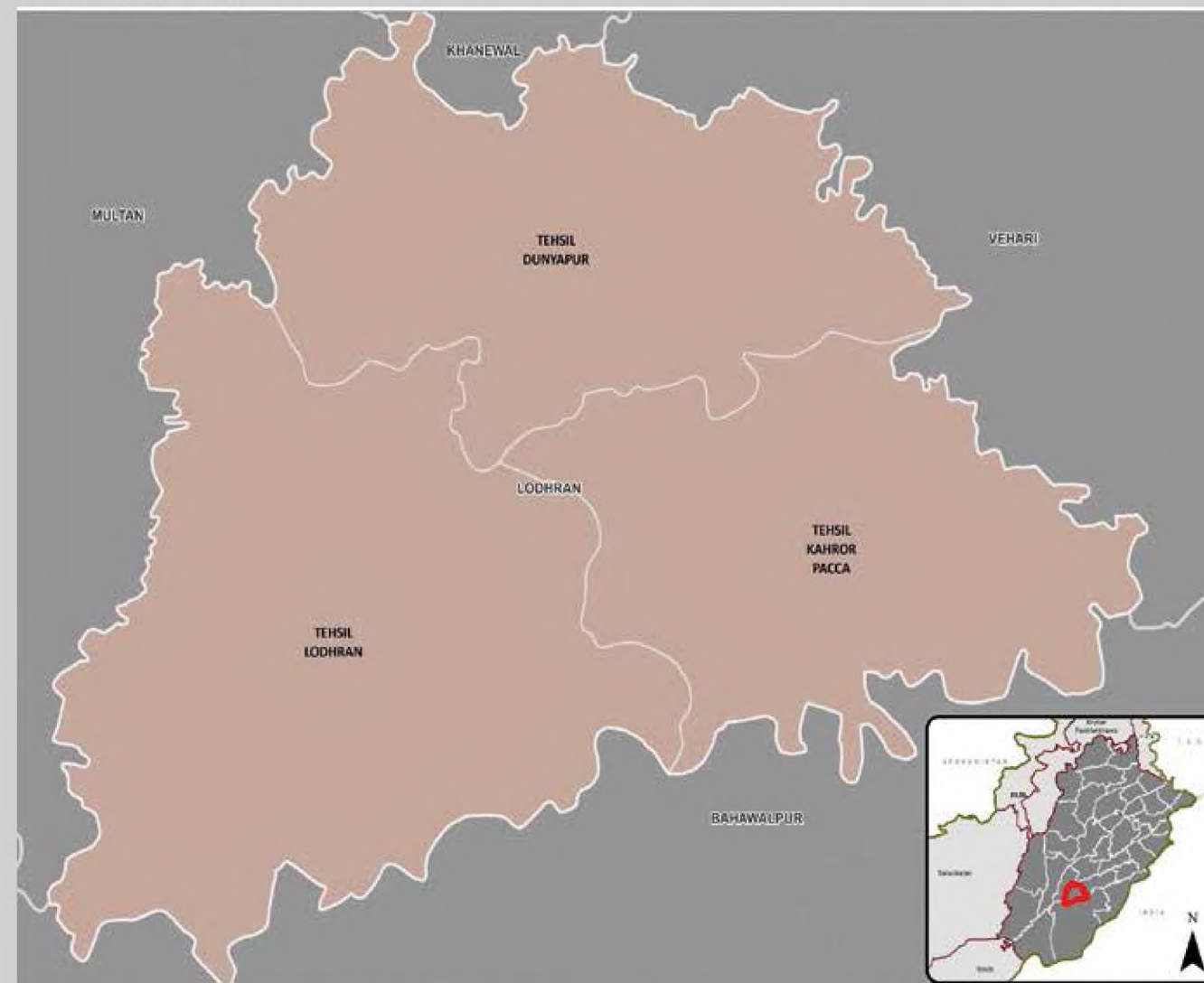
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Shahdara, Bhalike, Pacca, Gajiana, Nabipur
pH	7.6 – 10.3 (Average 8.27)
Electrical Conductivity (dSm⁻¹)	0.1 – 7.9 (Average 1.18)
Organic Matter (%)	0.1 – 1.6 (Average 0.71)
Available Phosphorus (ppm)	1 – 25 (Average 6.26)
Extractable Potassium (ppm)	26 – 380 (Average 153)
Farmers availing soil test facility (%)	50
Farmers availing water test facility (%)	4

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	446,689
Total Uncultivated Area (hectares)	36,695
Total Area under Irrigation (hectares)	446,689
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Rice
Total Livestock Population	1,573,118

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

MANDI BAHAUDDIN

Mandi Bahauddin district is bordered on the northwest by the Jhelum river, on the southeast by the Chenab River, and on the southwest by the Sargodha district. Hot and dry weather prevails during summer and cold during the winter. The main crops are wheat, rice, sugarcane, vegetables and fodder. There are three tehsils in the district: Mandi Bahauddin, Malakwal and Phalia. The district headquarter is located at Mandi Bahauddin.

SOIL ATTRIBUTES

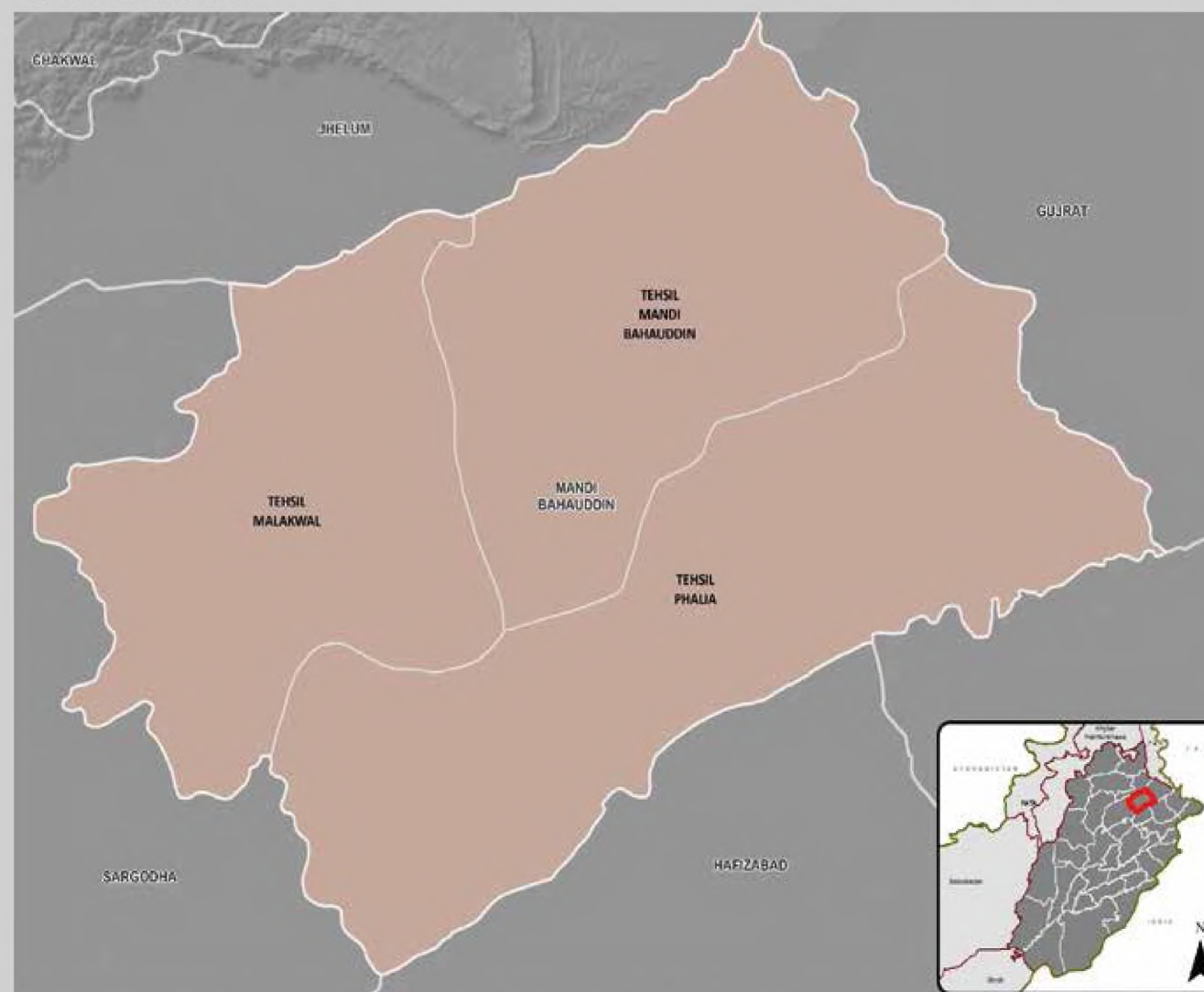
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Hafizabad, Miani, Shahdara, Lyallpur, Gujranwala
pH	7.2 – 10.3 (Average 8.27)
Electrical Conductivity (dSm ⁻¹)	0.1 – 9.2 (Average 1.18)
Organic Matter (%)	0.2 – 1.7 (Average 0.71)
Available Phosphorus (ppm)	1 – 20 (Average 6.26)
Extractable Potassium (ppm)	30 – 400 (Average 153)
Farmers availing soil test facility (%)	42
Farmers availing water test facility (%)	22

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	354,927
Total Uncultivated Area (hectares)	45,998
Total Area under Irrigation (hectares)	351,770
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane
Total Livestock Population	1,647,069

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Mianwali district is situated in the northwest of Punjab province. The climate is extreme with long hot summers and cold dry winters. The landscape is diverse varying from mountains, deserts, to lush green fields. The two well-known migrant clans of the district are the Niazi Pashtuns and the Awan tribe. The district comprises of three tehsils: Mianwali, Piplan and Isakhel. The district headquarter is at Mianwali.

SOIL ATTRIBUTES

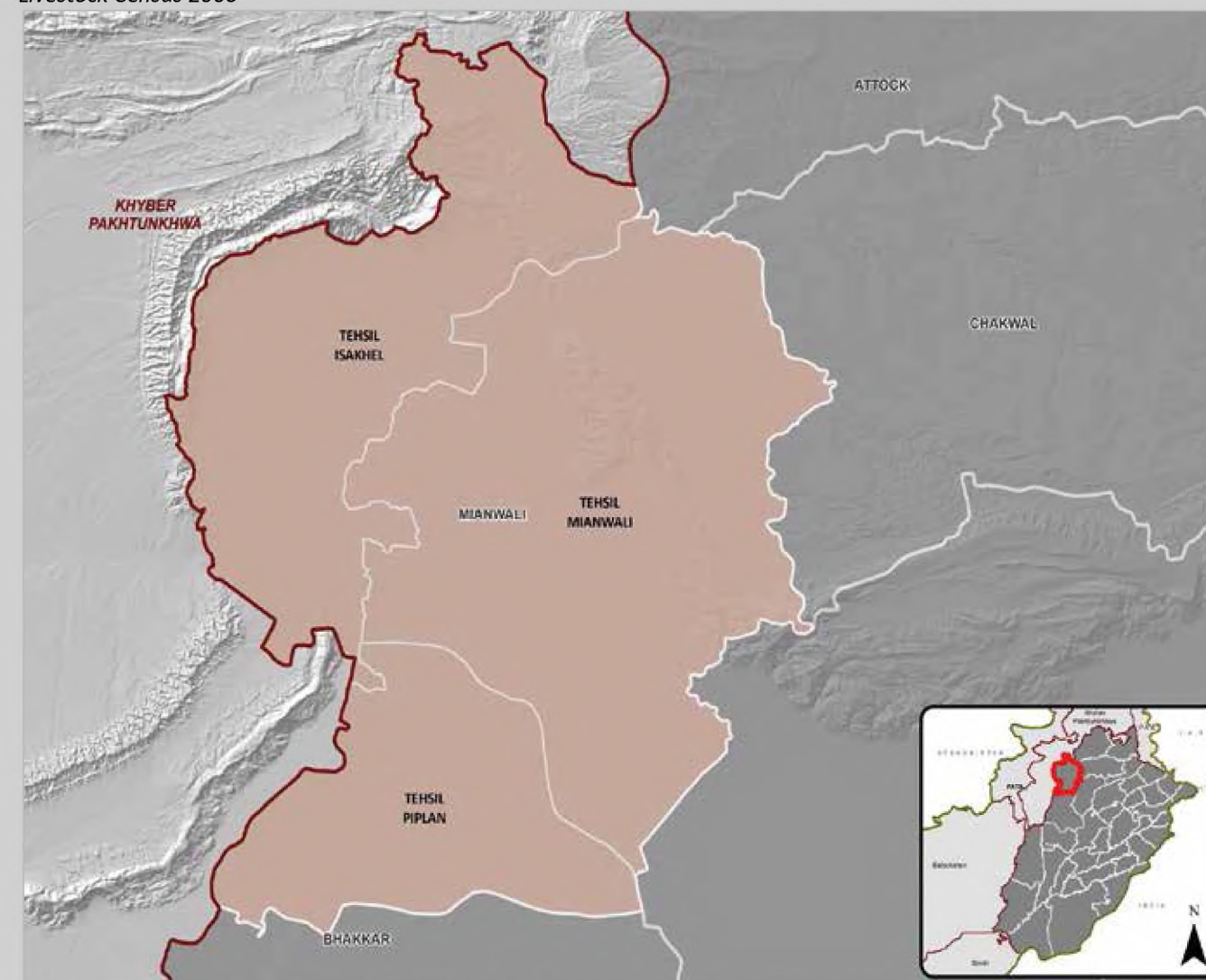
Parent Material	Mixed alluvium of river and piedmont plains
Dominant Soil Series	Shahdara, Bhakkar, Bhareri, Fazilpur, Banda
pH	7.2 – 8.6 (Average 7.91)
Electrical Conductivity (dSm⁻¹)	0.1 – 1.1 (Average 0.37)
Organic Matter (%)	0.2 – 1.4 (Average 0.76)
Available Phosphorus (ppm)	2 – 14 (Average 4.89)
Extractable Potassium (ppm)	50 – 300 (Average 148)
Farmers availing soil test facility (%)	12
Farmers availing water test facility (%)	12

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	341,562
Total Uncultivated Area (hectares)	194,540
Total Area under Irrigation (hectares)	262,965
Major Rabi Crop(s)	Wheat, Gram
Major Kharif Crop(s)	Sugarcane, Millet
Total Livestock Population	2,194,855

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

MULTAN

The land of Multan district is plain and very fertile with Chenab river passing on its western side. Hot and dry weather prevails during summer and cold during the winter. The main crops include wheat, cotton, sugarcane, vegetables and fruits (e.g. mango). There are four tehsils in the district: Multan City, Multan Saddar, Shujabad and Jalalpur Pirwala. The district headquarter is located at Multan which is known to be one of the oldest cities in the Southeast Asia.

SOIL ATTRIBUTES

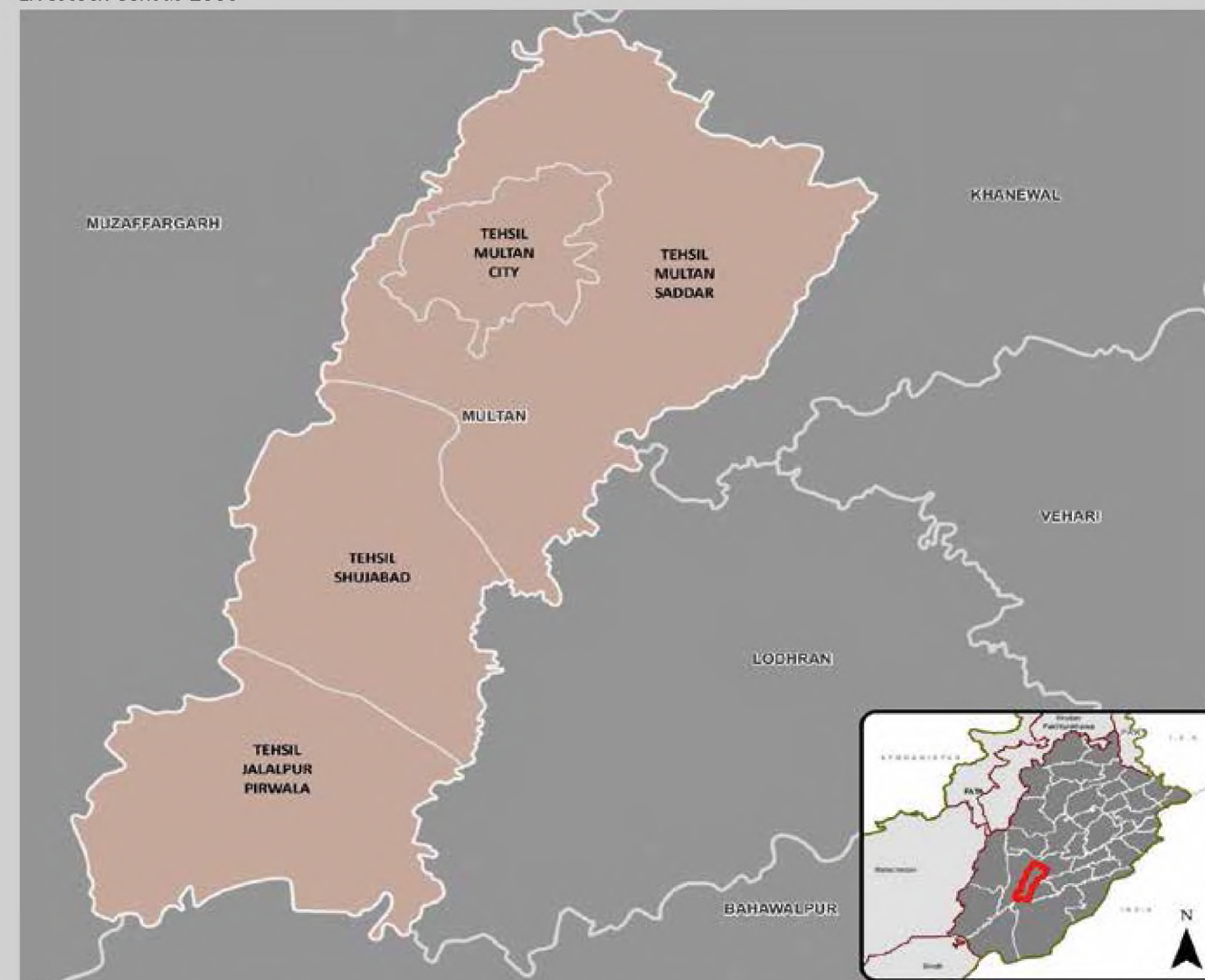
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Rustam, Shahdara, Bhalike, Pacca, Gajiana
pH	7.3 – 10 (Average 7.91)
Electrical Conductivity (dSm⁻¹)	0.04 – 37 (Average 0.37)
Organic Matter (%)	0.1 – 3.0 (Average 0.76)
Available Phosphorus (ppm)	1 – 50 (Average 4.89)
Extractable Potassium (ppm)	26 – 400 (Average 148)
Farmers availing soil test facility (%)	14
Farmers availing water test facility (%)	3

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	477,797
Total Uncultivated Area (hectares)	70,638
Total Area under Irrigation (hectares)	471,308
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Sugarcane
Total Livestock Population	2,342,891

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Muzaffargarh was founded by the Mughal governor of Multan, Nawab Muzaffar Khan in 1794. The district lies between Indus river in the west and Chenab river in the east. Hot and dry weather prevails during summer and cold during the winter. The main crops are cotton, wheat, sugarcane and fruit orchards (mainly citrus and mango). The land of this district close to the Chenab river is usually flooded in the monsoon season. There are four tehsils in the district: Muzaffargarh, Alipur, Jatoi and Kot Addu. The district headquarter is at Muzaffargarh.

SOIL ATTRIBUTES

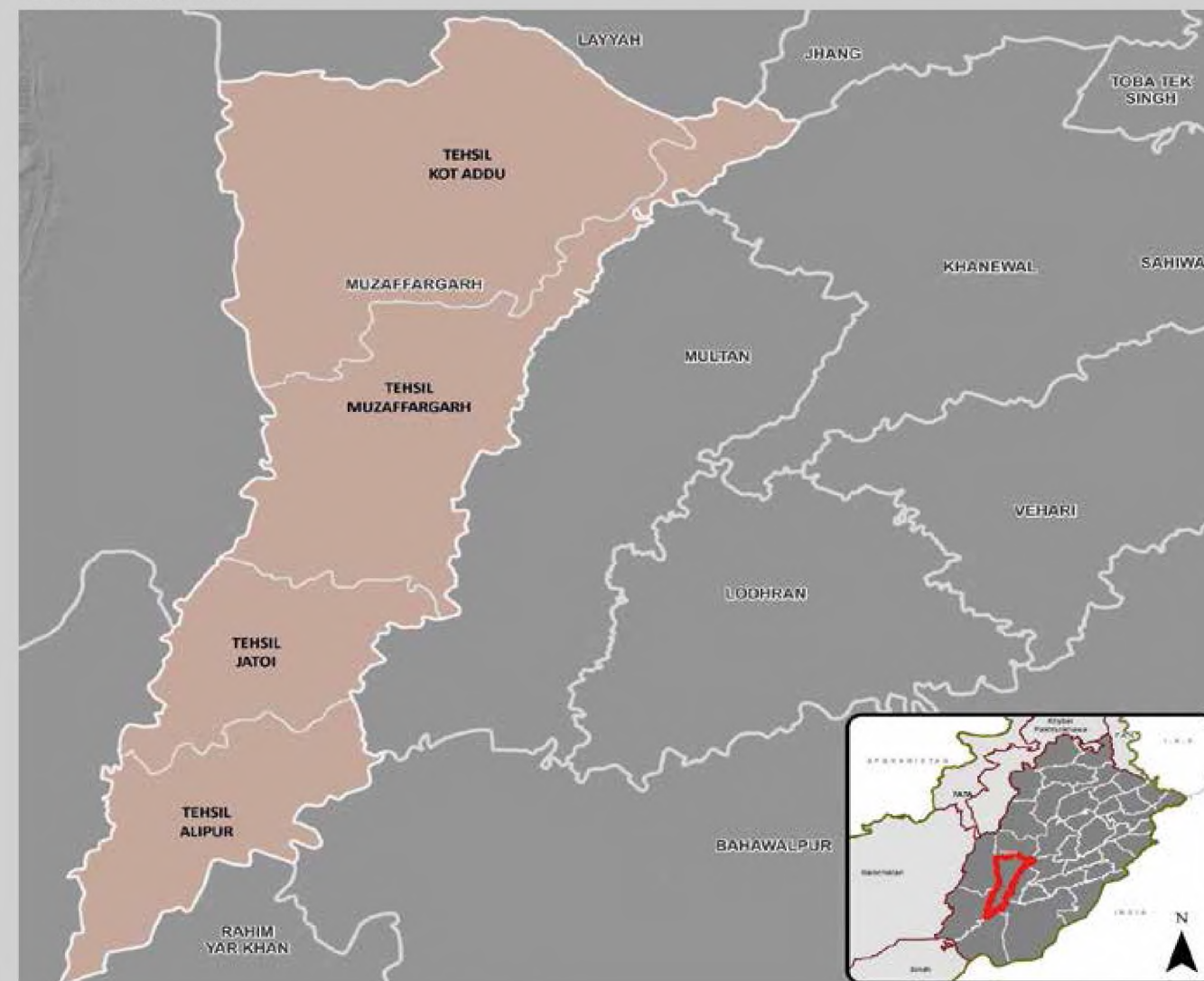
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Shahdara, Thal Rangpur, Matli, Sultanpur, Jhakkar
pH	7.3 – 10 (Average 7.91)
Electrical Conductivity (dSm⁻¹)	0.1 – 9.9 (Average 0.37)
Organic Matter (%)	0.1 – 1.5 (Average 0.76)
Available Phosphorus (ppm)	1 – 16 (Average 4.89)
Extractable Potassium (ppm)	25 – 392 (Average 148)
Farmers availing soil test facility (%)	16
Farmers availing water test facility (%)	3

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	679,637
Total Uncultivated Area (hectares)	403,752
Total Area under Irrigation (hectares)	658,818
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Sugarcane
Total Livestock Population	4,829,961

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

NANKANA SAHIB

Nankana Sahib was previously a tehsil of Sheikhpura district that raised to the status of district in May 2005. Climate of the district comprises of hot summers and cold winters. The main crops include wheat, rice, sugarcane, maize and vegetables. Nankana Sahib is famous for being the birth place of Baba Guru Nanak, the founder and first guru of Sikhism. There are three tehsils in this district: Nankana Sahib, Sangla Hill and Shakhkot. The district headquarter lies at Nankana Sahib.

SOIL ATTRIBUTES

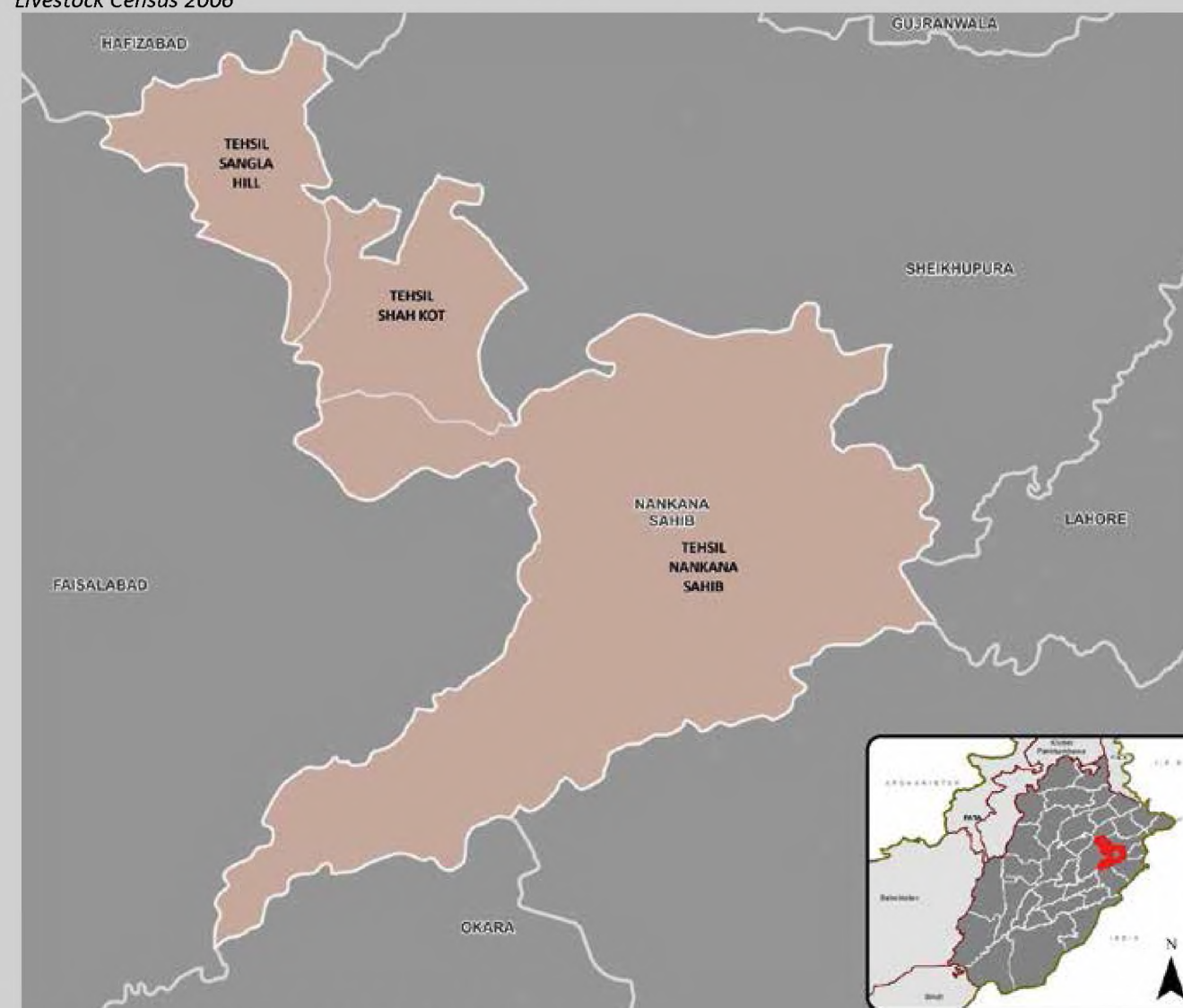
Parent Material	Mainly loamy and clayey soils of sub-recent river plains
Dominant Soil Series	Miranpur, Paccaa, Satghara, Pindorian, Rasulpur
pH	7.5 – 10.3 (Average 8.31)
Electrical Conductivity (dSm⁻¹)	0.1 – 5.0 (Average 0.54)
Organic Matter (%)	0.1 – 1.02 (Average 0.58)
Available Phosphorus (ppm)	1 – 24 (Average 7.23)
Extractable Potassium (ppm)	62 – 400 (Average 149)
Farmers availing soil test facility (%)	6
Farmers availing water test facility (%)	3

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	313,206
Total Uncultivated Area (hectares)	39,281
Total Area under Irrigation (hectares)	313,182
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane, Maize
Total Livestock Population	1,322,948

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Narowal district lies in the northeast of the Punjab and represents rice belt of the province. The district is bounded on two sides by alluvial soils. The climate is hot and dry during the summer and moderately cold in the winter. The main crops include rice, wheat, maize, vegetables and fruits. There are three tehsils in this district: Narowal, Shakargarh and Zafarwal. The district headquarter is situated at Narowal.

SOIL ATTRIBUTES

Parent Material	Loamy and clayey non-calcareous alluvium
Dominant Soil Series	Miani, Sindhlianwali, Kamunki, Shahdara, Sialkot
pH	7.4 – 7.7 (Average 7.58)
Electrical Conductivity (dSm⁻¹)	0.31 – 0.48 (Average 0.40)
Organic Matter (%)	0.5 – 0.7 (Average 0.63)
Available Phosphorus (ppm)	4 – 9 (Average 6.57)
Extractable Potassium (ppm)	104 – 132 (Average 117)
Farmers availing soil test facility (%)	33
Farmers availing water test facility (%)	18

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	299,559
Total Uncultivated Area (hectares)	58,270
Total Area under Irrigation (hectares)	220,108
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Maize, Potato
Total Livestock Population	983,573

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

OKARA

Okara district is famous for its fertile land, livestock and peaceful natural environment. It is bounded in the northwest by river Ravi and in the southeast by river Sutlej. The climate is hot and dry during the summer and moderately cold in the winter. The district represents well-defined mixed cropping belt of Punjab. The main crops are maize, potato, sugarcane, wheat and rice. There are three tehsils in the district: Okara, Depalpur and Renala Khurd. The district headquarter is Okara city.

SOIL ATTRIBUTES

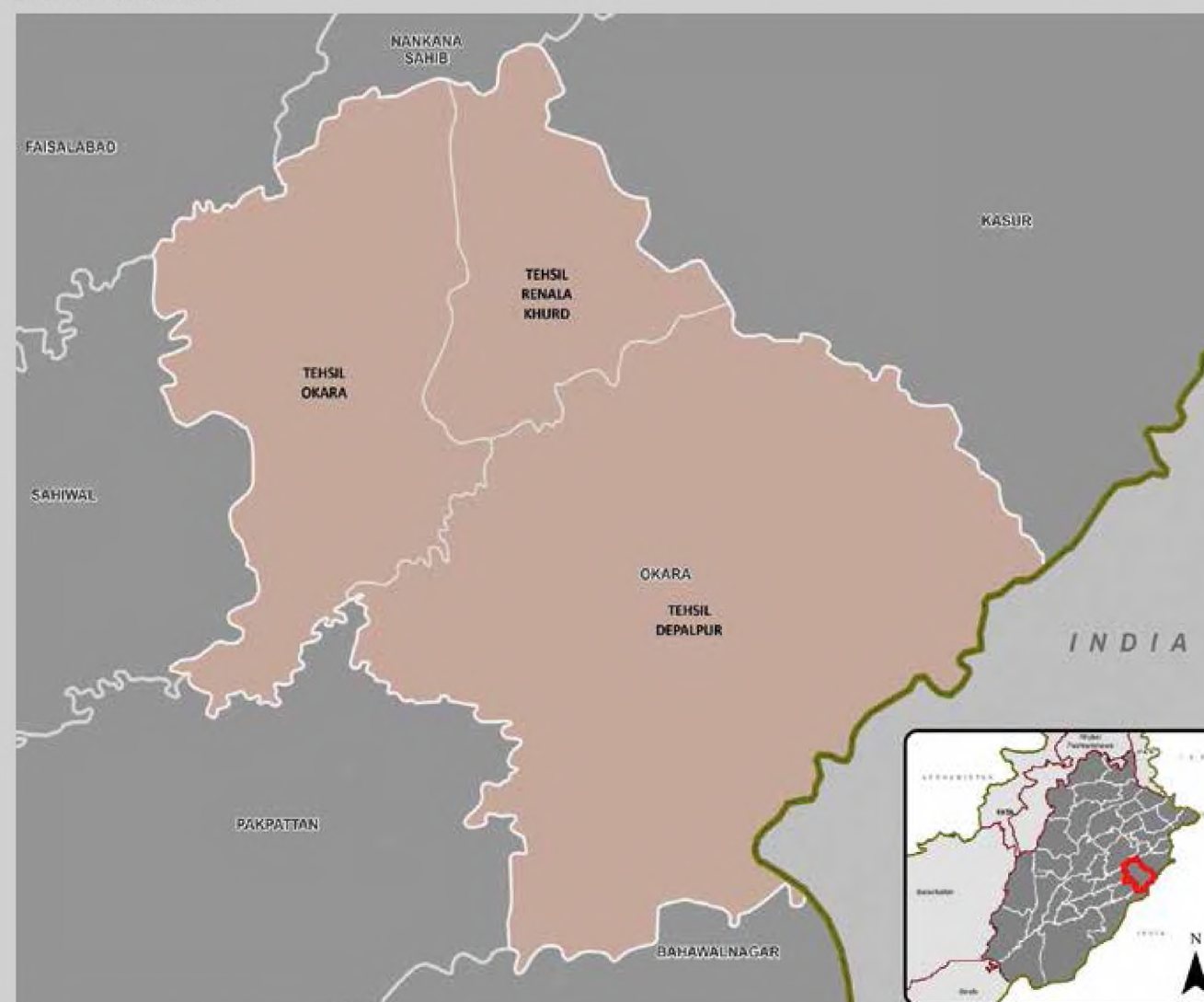
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Jhakkar, Shahdara, Qadirabad, Lyallpur, Sindhlianwali
pH	7.1 – 9.2 (Average 8.15)
Electrical Conductivity (dSm⁻¹)	0.1 – 4.8 (Average 0.42)
Organic Matter (%)	0.17 – 1.84 (Average 0.92)
Available Phosphorus (ppm)	3 – 20 (Average 5.33)
Extractable Potassium (ppm)	40 – 400 (Average 137)
Farmers availing soil test facility (%)	33
Farmers availing water test facility (%)	33

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	632,679
Total Uncultivated Area (hectares)	90,430
Total Area under Irrigation (hectares)	632,616
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Maize, Potato, Sugarcane
Total Livestock Population	2,309,614

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Pakpattan district is known for the fertility of its soil; therefore, most of the population of the district relies on agriculture. The climate is hot and dry during the summer and moderately cold in the winter. The main crops are wheat, rice, cotton, maize and sugarcane. The fruits and vegetables grown here include mango, guava, oranges, carrots and potatoes. Pakpattan is the city of great Saint Hazrat Baba Fariduddin Ganj Shakar. There are two tehsils in the district: Pakpattan and Arifwala. The district headquarter is located at Pakpattan.

SOIL ATTRIBUTES

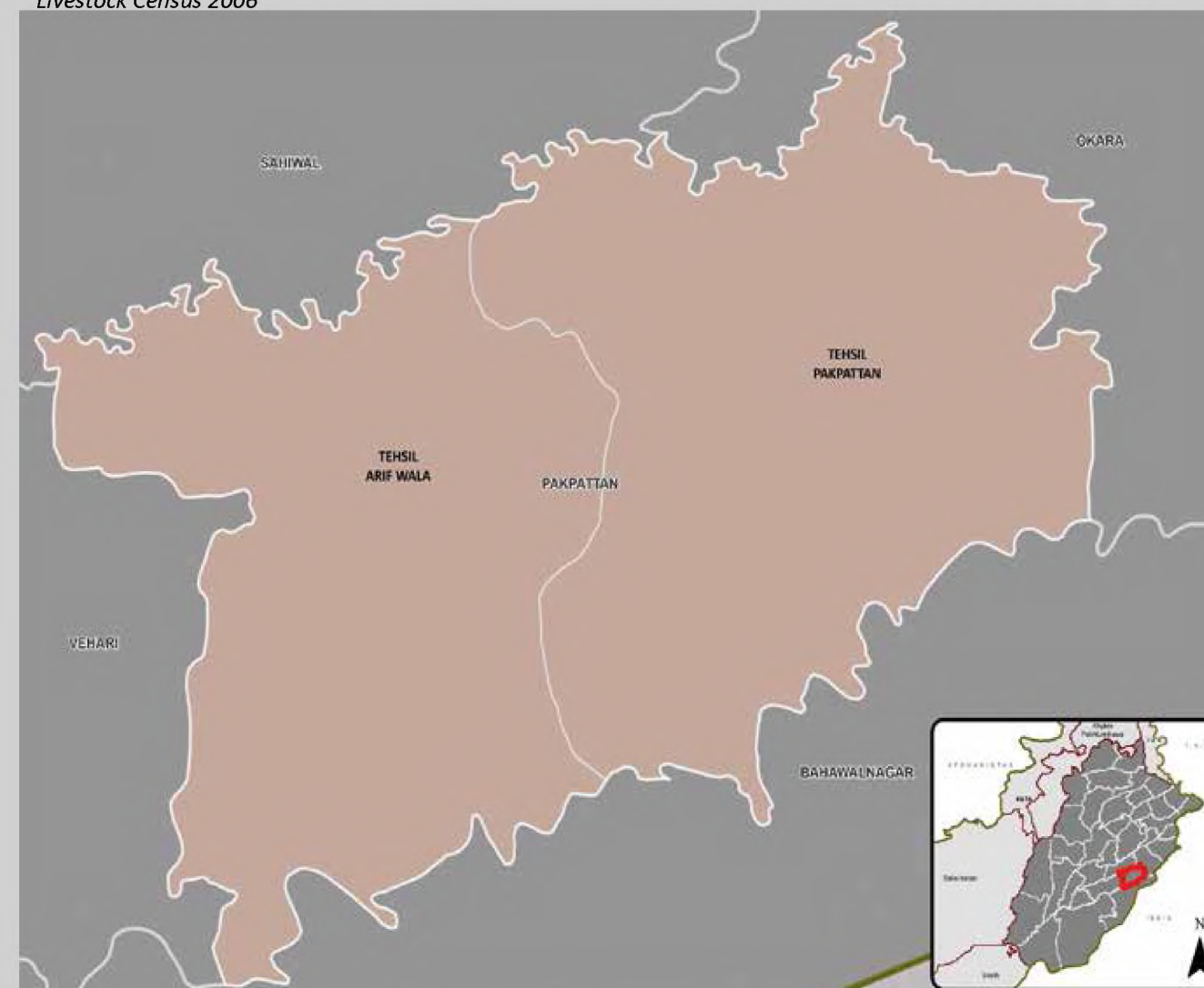
Parent Material	Mainly loamy and clayey sub-recent alluvium
Dominant Soil Series	Bagh, Jhakkar, Dungji, Pacca, Shahdara
pH	7.2 – 9.3 (Average 8.20)
Electrical Conductivity (dSm⁻¹)	0.1 – 8.2 (Average 0.35)
Organic Matter (%)	0.2 – 1.7 (Average 0.89)
Available Phosphorus (ppm)	3 – 15 (Average 5.42)
Extractable Potassium (ppm)	50 – 370 (Average 152)
Farmers availing soil test facility (%)	21
Farmers availing water test facility (%)	21

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	403,009
Total Uncultivated Area (hectares)	25,780
Total Area under Irrigation (hectares)	403,006
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Maize, Cotton, Rice, Sugarcane
Total Livestock Population	1,615,203

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan.

RAHIM YAR KHAN

Rahim Yar Khan district lies in the south of Punjab province. The climate is that of a desert with hot summers and mild winters. Major crops include cotton, sugarcane, wheat and the orchards of mango and citrus. Based on physical features, this district is divided into three main parts which are riverside area, canal irrigated area and desert area called Cholistan. There are four tehsils in Rahim Yar Khan: Khanpur, Liaquatpur, Rahim Yar Khan and Sadiqabad. The district headquarter is located at Rahim Yar Khan.

SOIL ATTRIBUTES

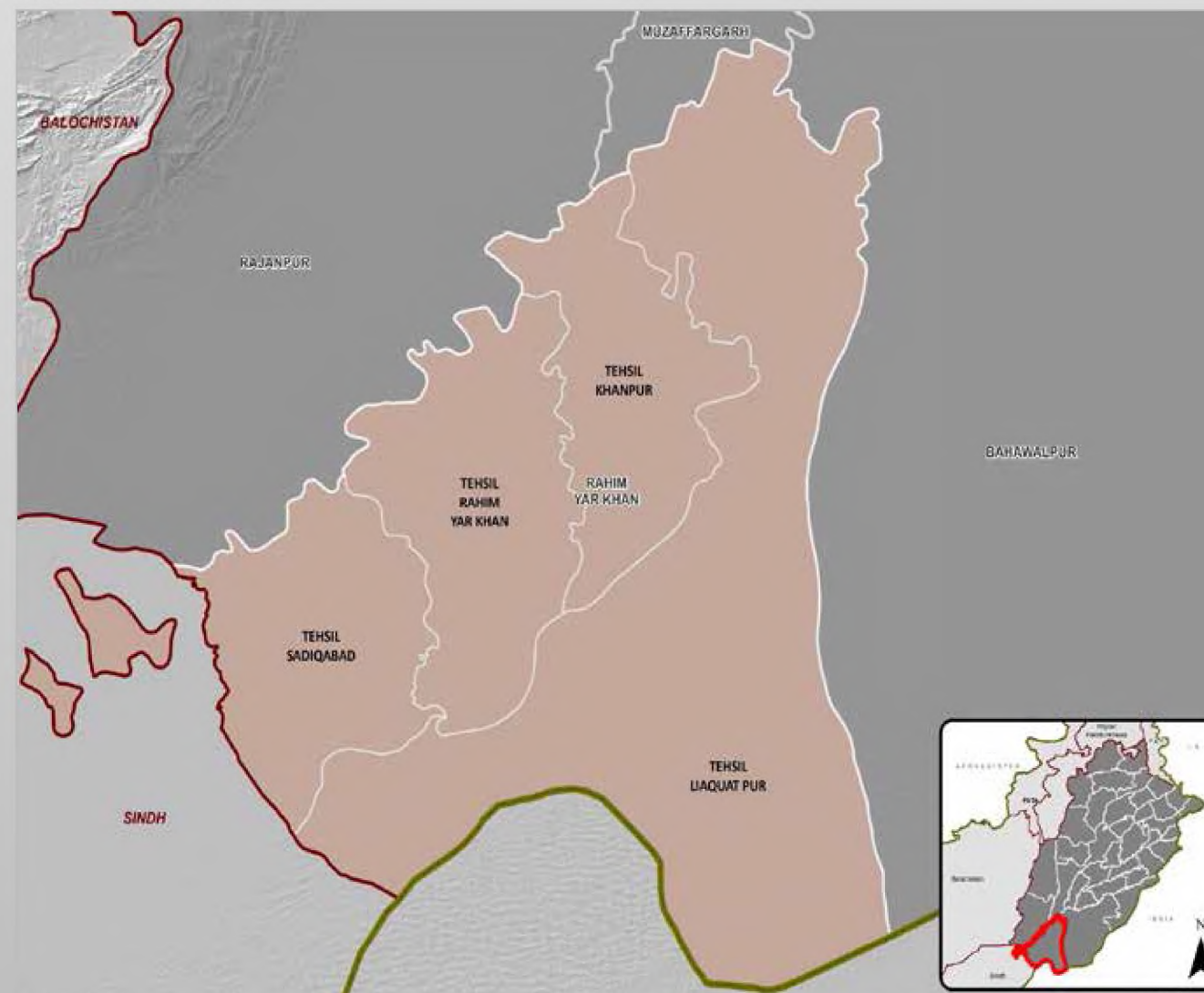
Parent Material	Mixed calcareous alluvium and sand plain
Dominant Soil Series	Bagh, Harunabad, Pacca, Shujabad, Sindhlianwali
pH	7.7 – 9.9 (Average 8.21)
Electrical Conductivity (dSm⁻¹)	0.1 – 12.5 (Average 0.85)
Organic Matter (%)	0.1 – 1.2 (Average 0.36)
Available Phosphorus (ppm)	2 – 12 (Average 5.23)
Extractable Potassium (ppm)	60 – 380 (Average 161)
Farmers availing soil test facility (%)	18
Farmers availing water test facility (%)	3

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	750,543
Total Uncultivated Area (hectares)	99,960
Total Area under Irrigation (hectares)	744,651
Major Rabi Crops	Wheat
Major Kharif Crops	Cotton, Sugarcane
	4,159,656

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Rajanpur district lies on the west bank of the Indus river in the south-west of Punjab province. The climate is hot and dry during the summer and moderately cold in the winter. The district is famous for cotton and sugarcane. Wheat and rice are also cultivated. Canal irrigation is the major source of water as the rainfall is negligible in the region. Occasional heavy rainfall causes flooding in the district. Hill-torrent irrigation is also practiced in the western parts of the district. The district headquarter is at Rajanpur.

SOIL ATTRIBUTES

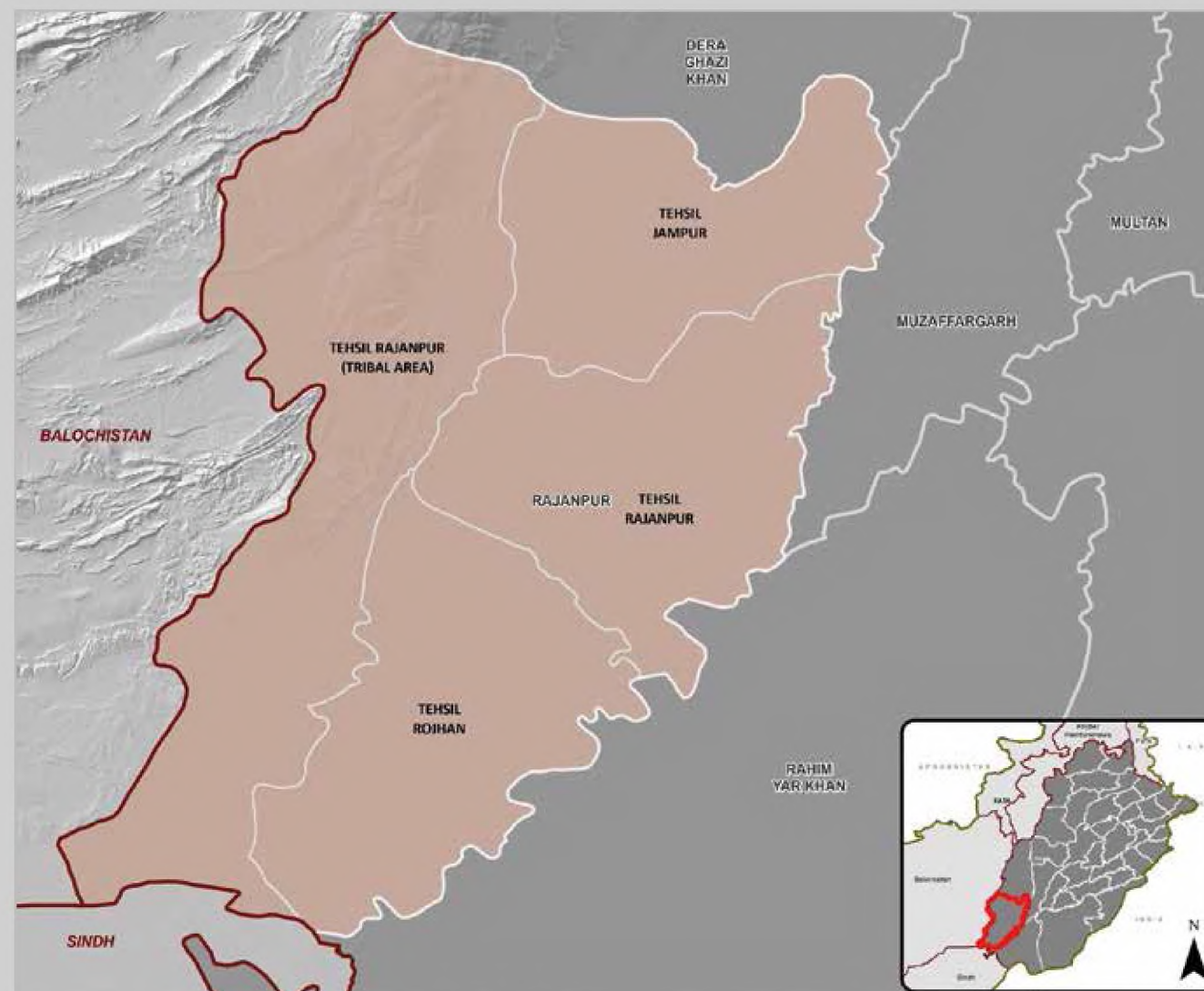
Parent Material	Loamy and clayey river alluvium and that of saline piedmont plains
Dominant Soil Series	Shahdara, Jhatpat, Kandhkot, Kahrora, Kashmore
pH	8.0 – 9.3 (Average 8.44)
Electrical Conductivity (dSm⁻¹)	0.1 – 9.9 (Average 1.57)
Organic Matter (%)	0.1 – 1.4 (Average 0.57)
Available Phosphorus (ppm)	1 – 14 (Average 3.90)
Extractable Potassium (ppm)	30 – 362 (Average 155)
Farmers availing soil test facility (%)	3
Farmers availing water test facility (%)	3

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	398,789
Total Uncultivated Area (hectares)	296,625
Total Area under Irrigation (hectares)	342,073
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Sugarcane
Total Livestock Population	2,324,116

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

RAWALPINDI

Rawalpindi is situated near Islamabad in the Pothwar Plateau, north of Punjab. Climate of the district comprises of hot summers and cold winters. The main crops grown in the district are wheat, barley, maize, millet, groundnut and pulses. Rawalpindi is the fourth largest city in Pakistan by population. There are seven tehsils in the district: Gujar Khan, Kahuta, Kallar Syaddan, Kotli Sattian, Murree, Taxila and Rawalpindi. The district headquarter is located at Rawalpindi.

SOIL ATTRIBUTES

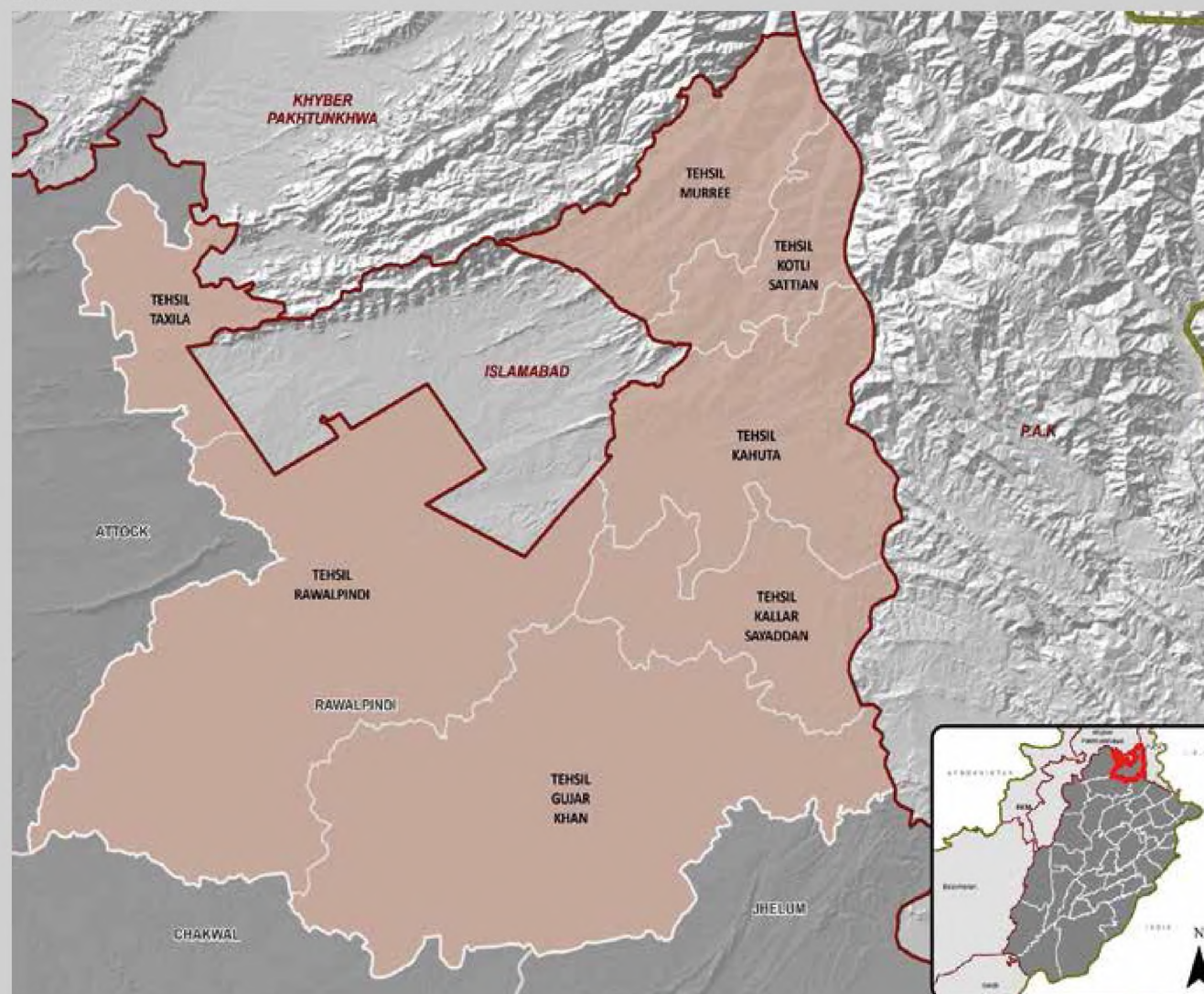
Parent Material	Mainly calcareous loess material
Dominant Soil Series	Rajar, Soan, Rawalpindi, Missa, Guliana
pH	7.2 – 8.5 (Average 7.81)
Electrical Conductivity (dSm⁻¹)	0.1 – 0.85 (Average 0.26)
Organic Matter (%)	0.3 – 1.2 (Average 0.55)
Available Phosphorus (ppm)	2 – 14 (Average 5.04)
Extractable Potassium (ppm)	40 – 380 (Average 118)
Farmers availing soil test facility (%)	9
Farmers availing water test facility (%)	9

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	233,393
Total Uncultivated Area (hectares)	251,931
Total Area under Irrigation (hectares)	10,700
Major Rabi Crop(s)	Wheat, Mustard
Major Kharif Crop(s)	Sorghum, Groundnut, Maize
Total Livestock Population	2,203,917

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Sahiwal district represents the mixed cropping belt of Punjab province. The climate of the district is extreme, i.e. very hot in summer and cold in winter. The soil of the district is very fertile. The main crops are maize, potato, wheat, cotton, sugarcane and rice while the fruits include citrus, mango and guava. The district is famous for its cattle and breed of buffaloes. There are two tehsils in the district: Sahiwal and Chichawatni. The district headquarter is at Sahiwal.

SOIL ATTRIBUTES

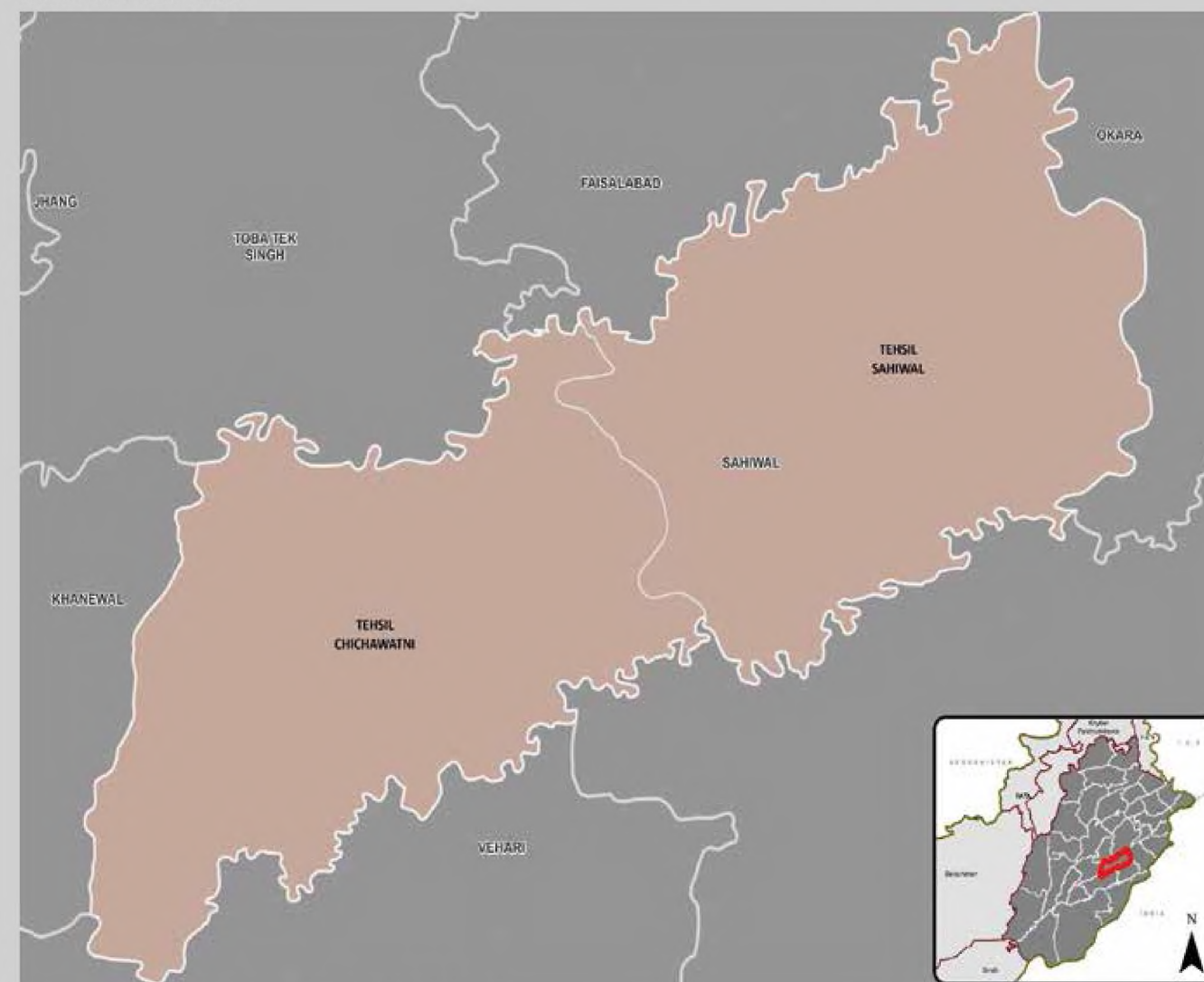
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Sultanpur, Bhalwal, Gamber, Lyallpur, Firoz
pH	7.5 – 10.4 (Average 8.22)
Electrical Conductivity (dSm⁻¹)	0.1 – 7.35 (Average 0.49)
Organic Matter (%)	0.1 – 2.6 (Average 0.78)
Available Phosphorus (ppm)	3 – 18 (Average 5.12)
Extractable Potassium (ppm)	30 – 400 (Average 138)
Farmers availing soil test facility (%)	20
Farmers availing water test facility (%)	32

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	447,182
Total Uncultivated Area (hectares)	58,411
Total Area under Irrigation (hectares)	447,101
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Maize, Potato, Sugarcane
Total Livestock Population	2,086,175

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

SARGODHA

Sargodha mainly comprises of flat and fertile plains between the River Jhelum on the west and north, and the River Chenab on the east. Climate of the district comprises of hot summers and cold winters. The district represents mixed cropping zone of Punjab and is mainly famous for citrus export. Main crops sown are wheat, maize, rice and sugarcane. There are seven tehsils in the district: Bhera, Bhalwal, Kot Momin, Sahiwal, Sargodha, Shahpur and Sillanwali. The district headquarter is at Sargodha.

SOIL ATTRIBUTES

Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Bhalwal, Lyallpur, Firoz, Gujranwala, Shahpur
pH	7.4 – 9.4 (Average 8.02)
Electrical Conductivity (dSm⁻¹)	0.1 – 5.0 (Average 0.46)
Organic Matter (%)	0.2 – 1.8 (Average 0.77)
Available Phosphorus (ppm)	2 – 18 (Average 5.11)
Extractable Potassium (ppm)	40 – 400 (Average 167)
Farmers availing soil test facility (%)	30
Farmers availing water test facility (%)	30

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	706,302
Total Uncultivated Area (hectares)	118,676
Total Area under Irrigation (hectares)	705,636
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Maize, Rice, Sugarcane
Total Livestock Population	3,028,870

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

Sheikhupura is commonly known for its industrial and agriculture surroundings and the best export-quality rice. The climate is hot and dry during the summer and moderately cold in the winter. Main crops in the district include rice, wheat and sugarcane, besides a variety of vegetables. There are five tehsils in the district: Sheikhupura, Ferozewala, Muridke, Sharakpur and Safdarabad. The district headquarter is located at Sheikhupura.

SOIL ATTRIBUTES

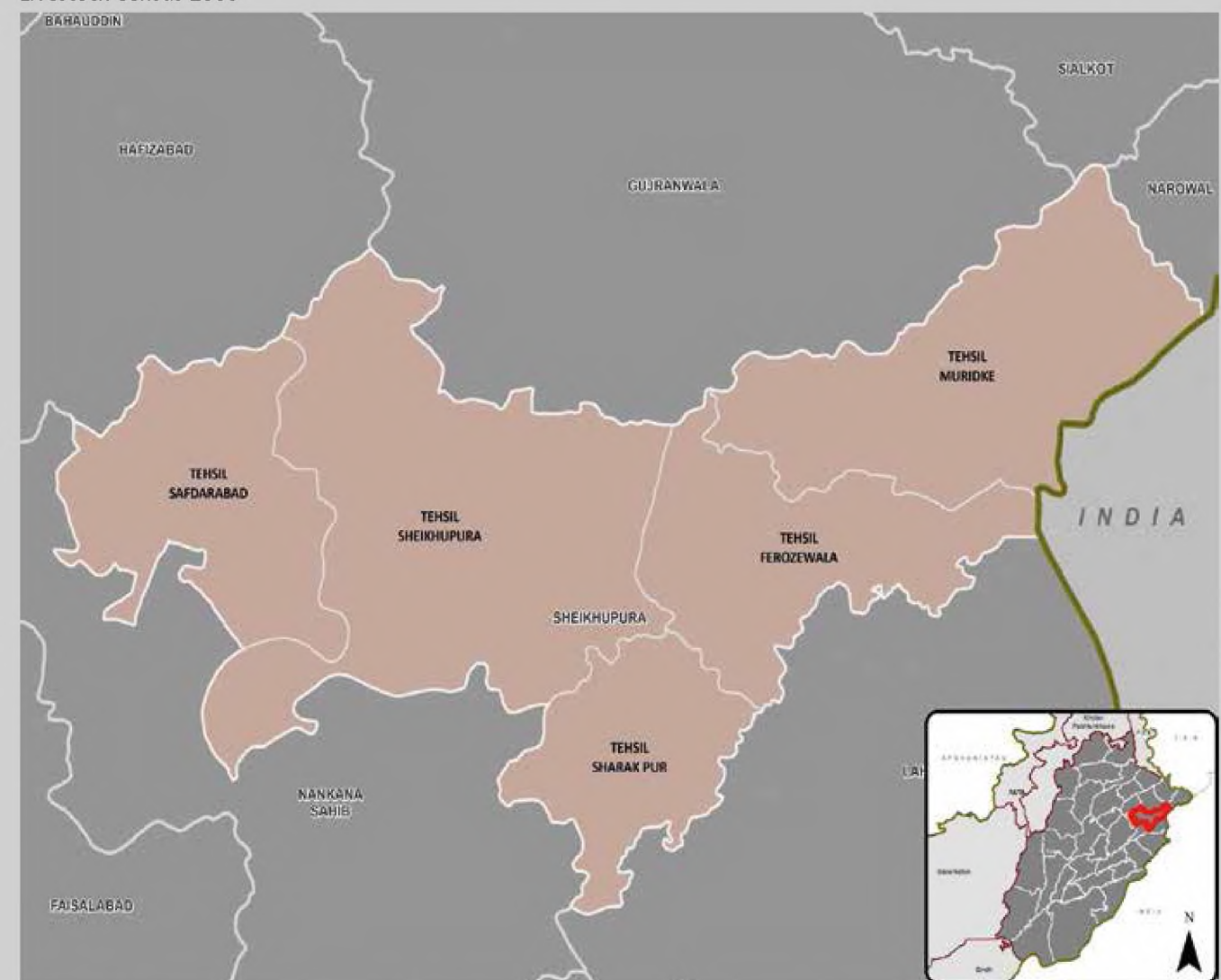
Parent Material	Mixed calcareous alluvium
Soil Series	Pacca, Lyallpur, Hafizabad, Bhalwal, Firoz
pH	7.4 – 9.8 (Average 8.28)
Electrical Conductivity (dSm⁻¹)	0.2 – 2.0 (Average 0.53)
Organic Matter (%)	0.2 – 1.4 (Average 0.72)
Available Phosphorus (ppm)	3 – 18 (Average 6.34)
Extractable Potassium (ppm)	90 – 400 (Average 163)
Farmers availing soil test facility (%)	41
Farmers availing water test facility (%)	34

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	516,801
Total Uncultivated Area (hectares)	52,698
Total Area under Irrigation (hectares)	516,801
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice, Sugarcane
Total Livestock Population	1,705,741

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

SIALKOT

Sialkot district is located in the northeast of the Punjab province. The climate is hot and dry during the summer and moderately cold in the winter. Main crops include rice, wheat, vegetables and fruits (e.g., guava and citrus). Sialkot is renowned for industrial production of sports goods, surgical instruments, leather goods/garments, cutlery and musical instruments. There are four tehsils of Sialkot: Daska, Pasrur, Sambrial and Sialkot. The district headquarter is located at Sialkot.

SOIL ATTRIBUTES

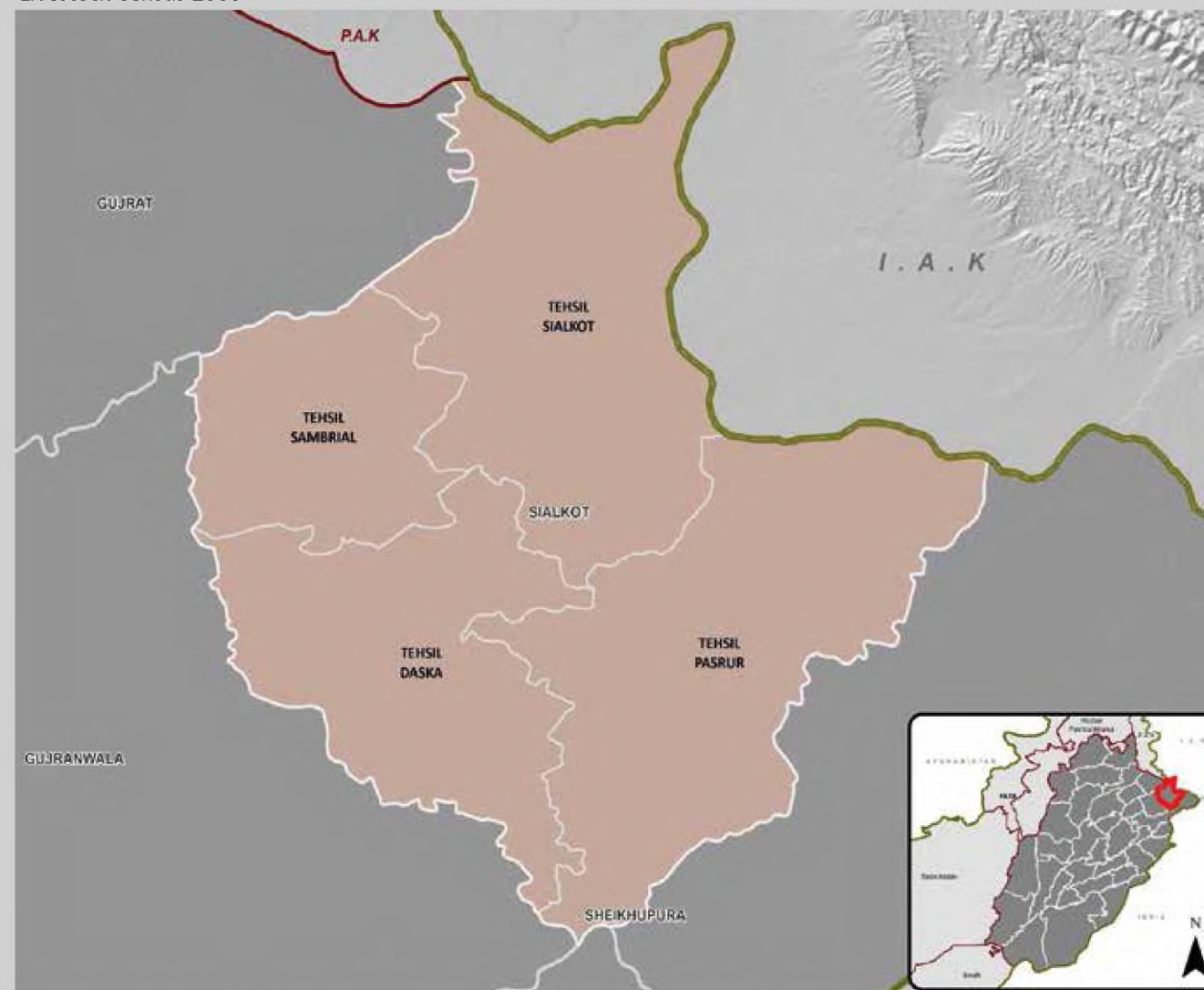
Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Sialkot, Pasrur, Gujranwala, Shakargarh, Miani
pH	7.2 – 8.5 (Average 7.70)
Electrical Conductivity (dSm ⁻¹)	0.2 – 0.8 (Average 0.46)
Organic Matter (%)	0.3 – 1.2 (Average 0.69)
Available Phosphorus (ppm)	3 – 28 (Average 7.84)
Extractable Potassium (ppm)	70 – 370 (Average 130)
Farmers availing soil test facility (%)	21
Farmers availing water test facility (%)	9

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	412,983
Total Uncultivated Area (hectares)	52,974
Total Area under Irrigation (hectares)	403,974
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Rice
Total Livestock Population	1,586,315

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan.

Toba Tek Singh is located in central Punjab. The district is one of the best producers of oranges in Pakistan. The climate is hot and dry during the summer and moderately cold in the winter. The district represents mixed cropping zone of Punjab. Majority of inhabitants are employed in the agriculture industry that produces several kinds of agricultural and dairy products. There are three tehsils in the district: Gojra, Toba Tek Singh and Kamalia. The district headquarter is at Toba Tek Singh.

SOIL ATTRIBUTES

Parent Material	Mixed calcareous alluvium
Dominant Soil Series	Lyallpur, Bhalike, Pacca, Gajiana, Rustam
pH	7.5 – 9.0 (Average 7.96)
Electrical Conductivity (dSm⁻¹)	0.2 – 1.0 (Average 0.41)
Organic Matter (%)	0.2 – 1.1 (Average 0.59)
Available Phosphorus (ppm)	2 – 20 (Average 5.95)
Extractable Potassium (ppm)	74 – 336 (Average 140)
Farmers availing soil test facility (%)	17
Farmers availing water test facility (%)	17

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	419,208
Total Uncultivated Area (hectares)	42,124
Total Area under Irrigation (hectares)	419,208
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Rice, Sugarcane
Total Livestock Population	1,710,668

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan.

VEHARI

Vehari is known for cotton production and was declared as district on 1 July 1976. The climate is hot and dry during the summer and moderately cold in the winter. The district consists of plains and fertile land suitable for growing cotton, wheat and other crops. The main fruit crops include mango, guava and citrus. Major land is irrigated by the Chenab and Ravi rivers. Vehari has numerous cotton processing factories, cotton-seed oil extraction plants; sugarcane processing is also common. The district has three tehsils; Mailsi, Vehari & Burewala and the district headquarter is located at Vehari city.

SOIL ATTRIBUTES

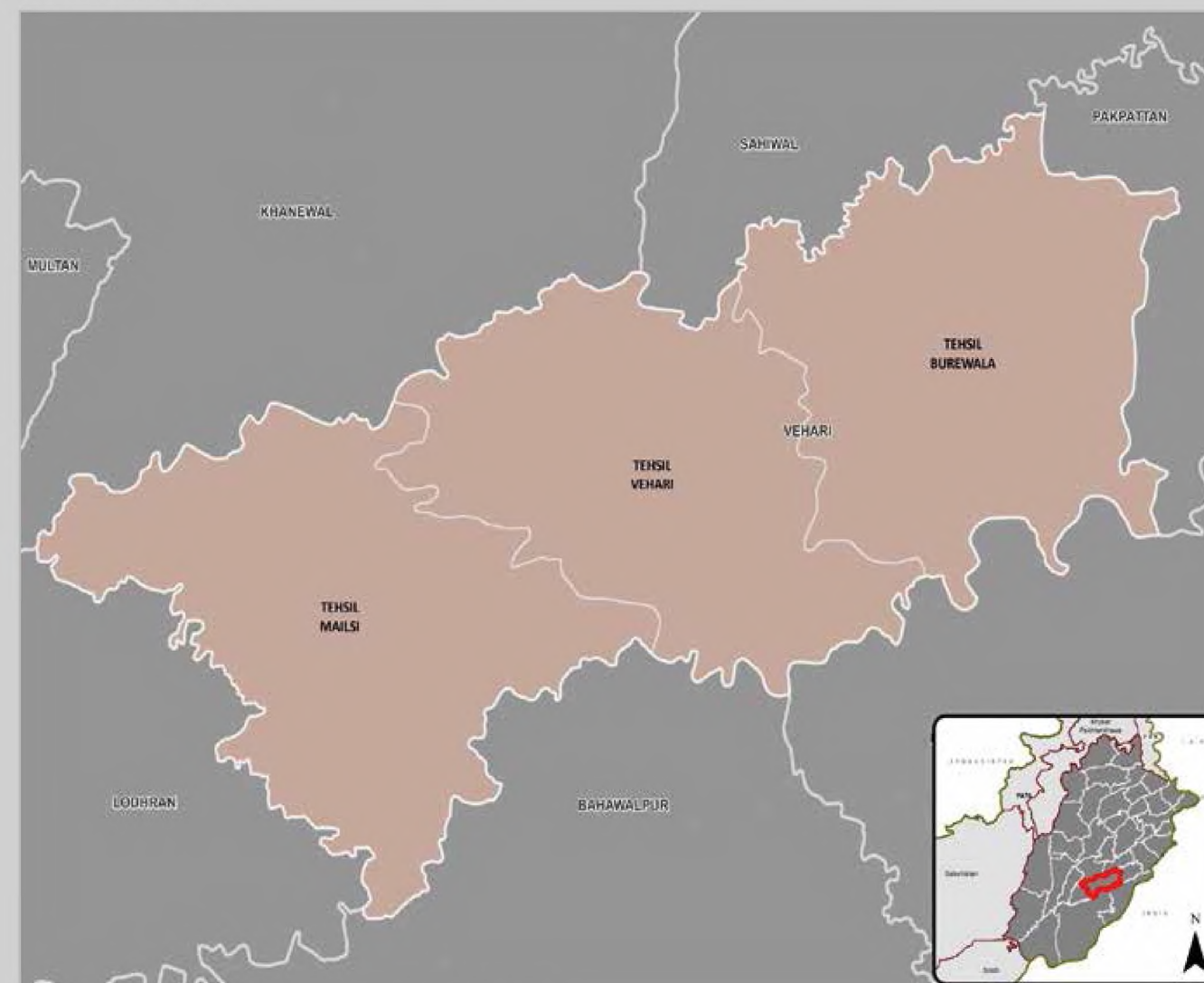
Parent Material	Sub-recent river alluvium
Dominant Soil Series	Bagh, Jhakkar, Pacca, Dungi, Shahdara
pH	7.6 – 9.0 (Average 8.28)
Electrical Conductivity (dSm⁻¹)	0.1 – 5.3 (Average 0.71)
Organic Matter (%)	0.1 – 1.4 (Average 0.64)
Available Phosphorus (ppm)	1 – 37 (Average 4.85)
Extractable Potassium (ppm)	34 – 282 (Average 127)
Farmers availing soil test facility (%)	23
Farmers availing water test facility (%)	23

Source:
 District Soil Survey Reports, Soil Survey of Pakistan
 Farm Advisory Service Centers, Fauji Fertilizer Company Limited (FFCL)
 Rapid Fertilizer Use Assessment, FAO (2015)
 Land Cover Atlas of Punjab (FAO, SUPARCO and Government of the Punjab)

AGRICULTURAL INFORMATION

Total Area Sown (hectares)	656,364
Total Uncultivated Area (hectares)	43,414
Total Area under Irrigation (hectares)	655,777
Major Rabi Crop(s)	Wheat
Major Kharif Crop(s)	Cotton, Rice, Sugarcane
Total Livestock Population	2,401,073

Source: Crop Reporting Services, Punjab; Economic Wing, Ministry of National Food Security & Research (2014-15); Livestock Census 2006



Source: Information Management Unit, FAO Pakistan

KEY MESSAGES

SOIL HEALTH MANAGEMENT AND CROP PRODUCTIVITY

As a result of intensive cropping and high yields over the years, most of agricultural soils in Pakistan have become deficient in various macro- and micro-nutrient elements, because the nutrients were not adequately replenished into the soils in proportion to the nutrients removed through crop harvests. Consequently, adoption of Fertilizer Best Management Practices (FBMP) according to specific farming system(s) is essential for sustainable crop production and maintenance of soil health. Therefore, following recommendations are formulated for the benefit of farming communities.

As the Management Practices differ according to the site conditions and farm systems, the fertilizers (nutrients) should be applied following the guiding principles of 4R Stewardship, as described below:

- Right source (Suitable source of nutrients)
- Right rate (Quantity applied according to crop requirement and soil test)
- Right time (Fertilizer applied at the time when crop can best utilize it)
- Right placement (Suitable method of nutrient/fertilizer application)

Soil and Water Testing Facilities: Such facilities are available at the district level both by government and private sectors (especially the fertilizer companies) free of cost or with nominal charges. Farmers should get soil and water samples analyzed before crop planting, and use optimum and balanced fertilizer based on soil test values for achieving maximum profitability.

KEY MESSAGES

SOIL HEALTH MANAGEMENT AND CROP PRODUCTIVITY

Ensure Use of Quality Fertilizers: Unless fertilizers are of good quality, the money and effort to correct soil-plant problems cannot be remunerative. Therefore, farmers are advised to buy good quality fertilizers from trusted/authorized dealers and reputed companies.

Integrated Plant Nutrient Management System: Balanced and integrated nutrient management is the key to soil health, high productivity, profitability and environmental protection. Biological sources of nutrients (organic fertilizers: green manure, farm yard manure, compost, poultry waste, etc.) including bio-fertilizers should be combined with inorganic fertilizers for enhancing nutrient use efficiency and improving soil health.

Crop Residue Management: Crop residues are good source of nutrients, and residue burning leads to different problems. Burning of crop residues should be discouraged; instead these should be incorporated into the soil for enhancing organic matter contents.

Conservation of Soil Moisture: Soil moisture is important for nutrient uptake and plant growth processes. Therefore, i) apply fertilizer at soil field capacity at sowing, ii) immediately irrigate in case the fertilizer is broadcast in standing crop, iii) apply fertilizer after rainfall in rainfed areas, and iv) use 1/2 N, P and K fertilizers at the time of sowing in arid zone/Barani areas.

KEY MESSAGES

SOIL HEALTH MANAGEMENT AND CROP PRODUCTIVITY

Use of Gypsum: It is an efficient way to preserve soil moisture and meet calcium requirements of groundnut in arid areas. Apply gypsum after every 3 years in wheat-groundnut cropping system. Multiple ploughing and use of mould board plough/deep plough in monsoon season is very effective to preserve soil moisture in arid areas.

Urea Losses: In sandy soils, apply Urea in 2 or more splits, but do not use more than the recommended rates. Excessive use of Urea may damage the crop through insect pest attack and depress fruiting through excessive vegetative growth/lodging. Apply Urea in the late afternoon when temperature is low to avoid volatilization losses.

Phosphorus Management: Farmers can reduce P use in the soils where soil P contents are adequate. For example, in areas where poultry manure is added, P rate can be reduced accordingly based on soil P test result. P application can also be reduced in Kharif crops (cotton and rice), if previous crop wheat was adequately fertilized with P.

Improving Produce Quality: Potassium is the quality nutrient element. Use of potash fertilizers where soils are K deficient, and the application of K fertilizers on high value fruit and vegetable crops is recommended.

KEY MESSAGES

SOIL HEALTH MANAGEMENT AND CROP PRODUCTIVITY

Salt-affected Areas: In such areas, special attention may be given to the right source of nutrients; the fertilizers containing both nitrogen and phosphorus, and possibly calcium as well may be preferred. Integrated use of soil amendments and organic fertilizers (farm yard manure, compost) improves efficiency of inorganic fertilizers. Bed-and-furrow sowing and more split applications of fertilizers will further enhance nutrient use efficiency of salt-tolerant crop cultivars.

Irrigation Management: Irrigation management is very important factor wrt the water quality for optimal crop production, particularly under salinity stress conditions. Therefore, poor quality/marginal saline water should be used in cyclic manner, i.e. one or two irrigations with brackish water should be followed by canal water. Brackish water may be used to grow the crops which require more water; for example, grow rice or sorghum with brackish water followed by canal irrigated wheat.

Appropriate Amendments/Manures: Appropriate amendments should be applied to maintain soil health under irrigation with poor quality water. When water is sodic, apply gypsum after the harvest of two crops, i.e., rice-wheat according to soil gypsum requirement; addition of farm yard manure/green manure may be included if water is saline.

KEY MESSAGES

SOIL HEALTH MANAGEMENT AND CROP PRODUCTIVITY

- **Use of Micronutrients:** Few well-known micronutrient deficiencies in Pakistan are: zinc (Zn) deficiency in rice, boron (B) deficiency in cotton, and iron (Fe) chlorosis in deciduous fruits and citrus. Deficiency of micronutrient(s) may be catered through soil application or foliar spray, for example:

Wheat grains in Pakistan contain around 25 mg Zn kg⁻¹, which is much lesser than 40–60 mg Zn kg⁻¹ required for good human health. The Zn concentration in wheat grains can be increased effectively by applying two foliar sprays of Zn – the first one week prior to heading and the second one week after heading.

Boron deficiency in cotton crop promotes premature flower abortion and in rice crop results in empty panicles on lower end of the ears. Application of boron in cotton may stop dropping of bolls/flowers and reduce sterility in rice.

Most fruit orchards (Apple, Peach, Plum, Citrus) suffer with the deficiencies of Zn and Fe, which may be corrected by applying 2 to 3 foliar sprays of Zn and Fe source as well as by soil application of micronutrient fertilizers. Further, application of macro- and micro-nutrients in orchards is necessary for quality and optimum yield.

Soil-applied micronutrient fertilizers leave beneficial residual effects on soil that can last for 3–6 subsequent crops, in certain cases. Therefore, it is not necessary to apply micronutrient fertilizer to each and every crop. However, periodic soil testing is recommended to ascertain the need for micronutrient application to subsequent crops in the same field.

Micronutrient fertilizers mixed with foliar solutions of pesticide sprays are equally effective in correcting micronutrient deficiencies. For example, zinc sulfate mixed with Confidor insecticide remains effective in ameliorating deficiency of Zn in wheat as well as in increasing Zn density in wheat grains. For cotton as well, B fertilizer can be mixed safely with foliar sprays of pesticides.

KEY MESSAGES

SOIL HEALTH MANAGEMENT AND CROP PRODUCTIVITY

- Use of Agricultural Helplines: Advisory services are available to help the farmers and resolve their problems of emergent nature on priority. The farmers are welcome and encouraged to benefit from the toll-free Helplines listed below.

Punjab Agriculture Helplines 0800-15000 and 0800-29000 remain active 12 hours daily from 08:00 a.m. to 08:00 p.m. The computerized recording of calls, along with display of callers' ID with date and time, helps in locating the callers for prompt feedback by technical experts on the same day.

Punjab Agriculture SMS Helpline Service is also available to extend technical guidance to the farmers using mobile phones. Farmers may send SMS at 0304-4000172 from any cellular network for seeking information and guidance to resolve their field problems.

Private Sector, for example, Fauji Fertilizer Company Limited also offers toll-free Helpline 0800-00332 for farmers to contact for farm advisory services and agriculture associated issues. Moreover, the agriculture related services can also be obtained from other fertilizer companies by visiting their offices (see Annexure-V (page 110) for soil and water testing facilities available in Punjab).