

TAGS:

Koh-e-Safed, Waziristan, Sulaiman, Kirther, rivers, Streams, Koh-e-Safed, **Glaciers, Thar, Thal, Kharan**, Kalachitta, Margala hills, Soan, Khewra, Makrachi, Kallar kahar, Khabeki, Uchchali, barani farming, economic sources, oil refinery, HMC Taxila, Rock Salt, Barani farming, wheat, pulses, oil seeds, Zhob & Loralai, Quetta, Ziarat, Pishin, Chagai hills, Ras Koh, Hala Ranges, Makran Coast Ranges, Central Brahui Ranges, Toba Kakar Range, Siahan Range, Balochistan plateau, Bolan, Ghonsher, Kojak, Kachi Sibi, Lasbela, Makhran, coast of Makhran, Indus, Arabian sea, Upper Indus Plain, Lower Indus Plain, Punjab, Sindh, Sindh Sagar, Chaj, Rachna and Bari doab, Alluvial flood plain, Active Flood Plain, rainy season, braided channel, alluvium, Ravi, Meanders, levees, Old Flood Plain, Cover Flood Plain, alluvial terraces, active flood plain, Meanders scars, Scrap, Old Flood Plain, Bar Upland, Kirana Bar, Chaj Doab, Sandal bar, Rachna Doab, Gangi Bar, Nili Bar, Bari Doab, *crescent-shaped lake*, Piedmont Plains, Naran River, Thar canal, Oasis, **Nara**, Sand dunes, Sandy soil, Tough, crest, **Cholistan**, Topography/Relief features, Northern & Western Mountains, Potwar & Balochistan Plateaus, Upper Indus & Lower Indus Plain, Desert, Cuesta, Ox bow Lake, Badland Topography, Hamuns, natural features, valleys, mountains, plains, altitude, height, Pakistan surrounding countries, coastal areas, delta region, Karakoram, Hindukush, Himalayas, drainage

THE TOPOGRAPHY OF PAKISTAN

The Topography has different synonyms and may also be known as Relief, Natural features, Physical features etc. now the question arises that what is relief/topography?

So, *Relief* is the inequalities or variations in shapes and forms of the earth's surface e.g. mountains, valleys, plateau, plains etc. These features are differentiated on the basis of their formation, shape and mainly *Altitude* (height).

To understand the topography of Pakistan, we must study at the surrounding of the country. Have a look onto the map shown. In the North, we have Mountain systems that give passage to China and also to C.A.S of Tajikistan. In East, the Plain (flat surface) that leads to India where as in West rugged plateau of Balochistan and mountainous area of KPK takes to Afghanistan. In Southwest, we have Iran. Arabian Sea is located in the extreme South of Pakistan.

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Topographically, Pakistan has been divided in 05 main categories.

- Mountains... Northern Mountains & Western Mountains
- Plateau... Potwar Plateau & Balochistan Plateau
- Plains... Upper Indus Plain & Lower Indus Plain
- Deserts
- Coastal Areas & Delta Region

Mountains

- Northern Mountains
- Western Mountains

Northern Mountains

Starting from the most beautiful part of Pakistan in terms of scenic beauty, Northern Mountains. These mountains comprise of further three divisions and cover the areas as mentioned against each.

- Karakoram (6000m)... Gilgit Agency
- Hindukush (5000m)... Chitral
- The great Himalayas (4000m)...Murree, Natia Gally etc.

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The relief feature of these mountains includes the high altitude i-e 5000m, mostly Snowy peak with number of glaciers Siachen, Baltro etc. They have east to west in direction...Himalayas, Karakoram. Important passes of these mountains are Khunjarab, Karakoram, Babusar. The eye attracting valleys of Kaghan, Naran, Murree etc all present in this region. Overall they have a difficult landscape.

There is a term going parallel to relief is *Drainage*, The natural/artificial runoff of water from an area by streams, rivers, canals etc and the Drainage Pattern is the arrangement of the main river and its tributaries (Trellis, inland, parallel barbed pattern) in any area. The drainage of Northern Mountains includes the main Rivers like Indus, Jhelum and the fast flowing Streams Gilgit, Hunza, Swat, Kundhar etc. Due to the presence of glacier we experience Melting glacier and snow from peaks, subsequently resulting in the existence of waterfall. These mountains have number of permanent and seasonal lakes e.g Saif-ul-muluk, Mahodant, Ansoo.

The economy of these mountains is limited but has potential to grow. These areas have Cottage industries in mostly all family members can work. The product is sold out in the local market and a limited amount is exported too. These mountains are beautiful in term of scenic beauty and attract tourist from across the world. People here earn through hotels, transport facilities and tourist guides. Environmentally and traditionally these mountains suit Livestock farming of cattle, goat and sheep. Limited Agriculture for growing wheat, pulses, tobacco, vegetables, and fruits is also practiced. HEP production is suitable because of cold climate, natural reservoirs and steep slope of the mountains. Overall there is a Low per capita income of the area.

Western Mountains

Western Mountains comprises of 04 mountain systems. These mountains system covers the areas of FATA, WANA and comparatively barren landscape like Dadu, D.I. Khan etc. The details are as follows:

- | | | | |
|---------------|--------|-----------------------------|-----------------------------|
| • Koh-e-Safed | 4500m, | Near Peshawer, | East to west in direction |
| • Waziristan | 3700m | WANA | North to South in direction |
| • Sulaiman | 2500m | Border of Punjab & Balochtn | North to South in direction |
| • Kirther | 1700m | Border of Sindh & Balochtn | North to South in direction |

The topographical features of these mountains are the low altitude as compare to northern mountains i-e 4500 – 1700m. Snowy peak mainly exist in Safed Koh. These mountains have

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Difficult Landscape and tough terrains. Major Passes are Khyber, Kurrum, Tochi, Gomal, and Bolan. The area has limited amount of cultivation in Valleys of Kohat, Bannu and Vales of Peshawer.

The drainage features of western mountains are:

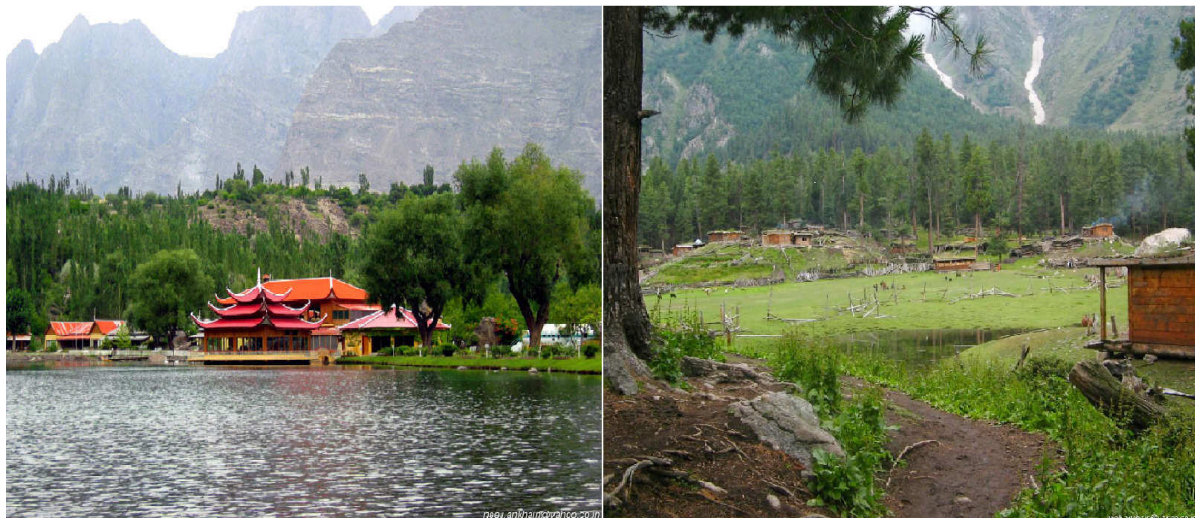
- Fast flowing rivers...Kabul, Tochi, Kohat, Kurrum
- Streams
- Melting of snow from peaks...mainly in Koh-e-Safed
- Waterfalls may only be in Koh-e-Safed

The condition and style of life in this area is difficult as infrastructure (roads, utilities) is poor and unavailability of safe drinking water. Mostly houses are of variety i-e concrete to mud with steel sheets roof. There is also scarcity of food, the main diet content is meat, milk and vegetables. The population density is low as people live in tribes and agencies. Overall life is difficult in Western Mountains.

Glaciers... important source of water



Different valleys of Northern Mountain in Pakistan



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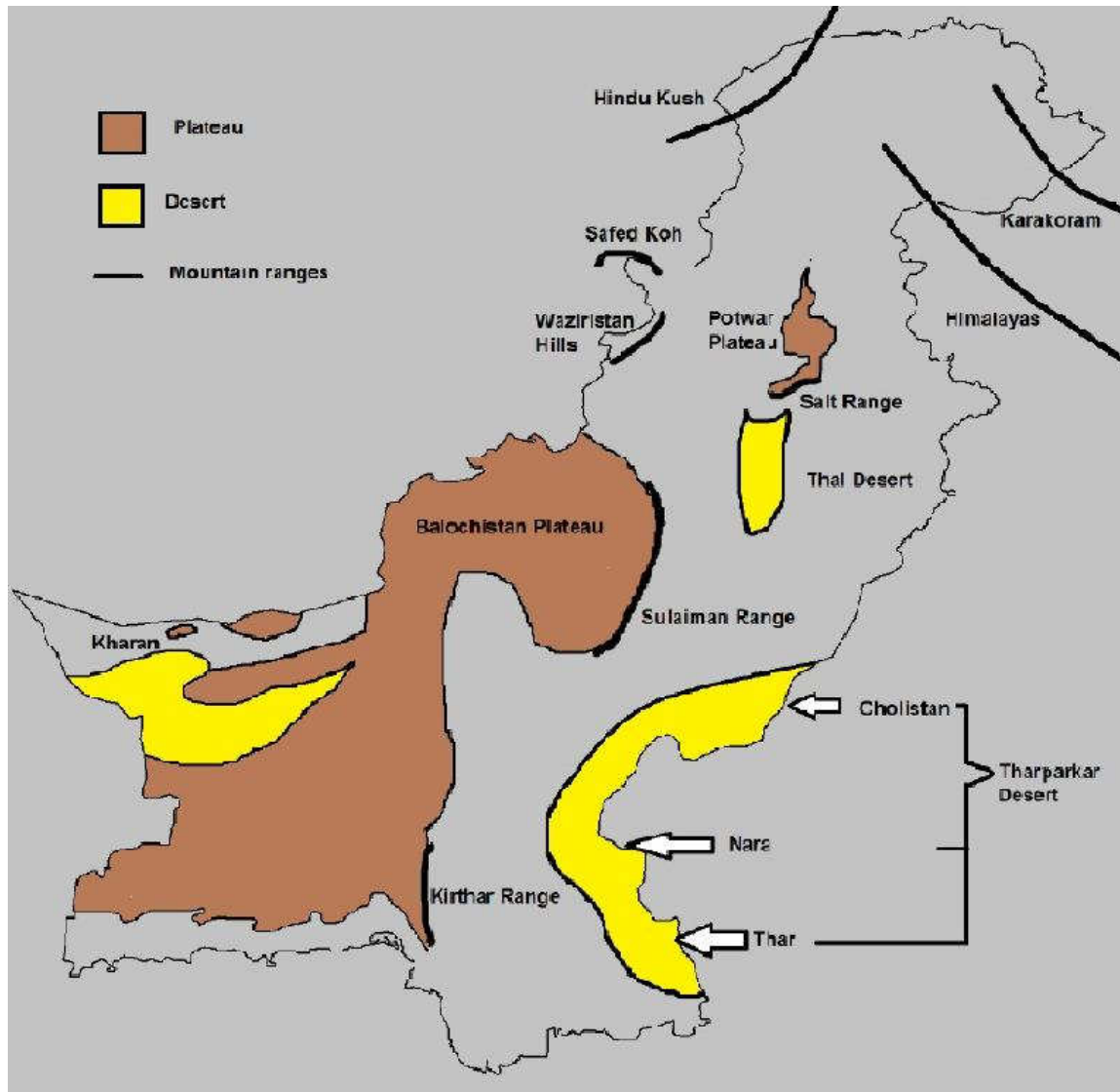


A sight of Pass...natural passage in the mountains



Map of Pakistan showing Mountains (Northern & Western) along with Plateau (Potwar & Balochistan) and Desert (Thar, Thal & Kharan).

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Northern Mountains...Karakoram(Gilgit), Hindukush(Chitral) and Himalayas(Murree,Naran etc)

Western Mountains...Safed Koh, Waziristan Hills, Sulaiman Mountains and Kirthar Ranges

Potwar plateau... Punjab, Sindh Sagar Doab

Balochistan Plateau...Balochistan

Thar Desert...Tharparker(lower Sindh), Nara(upper Sindh), Cholistan(Lower Punjab)

Thal Desert...Punjab, South of Potwar Plateau in Sindh Sagar Doab

Kharan Desert...Balochistan, South of Chagi Hills

Plateau

Plateaus are the areas of little variation, lesser than mountains and higher than plains. In Pakistan there are two plateaus.

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- Potwar plateau
- Balochistan plateau

Potwar Plateau

The plateau is situated in Sindh Sagar Doab, between river Indus and Jhulum. It includes the areas of Jhelum, Rawalpindi, Islamabad and Attock. It also includes the famous Salt Ranges.

The relief of potwar plateau is termed as badland topography, the area which is eroded and dissected by the action of wind and running water. The symmetry of the mountain is disturbed and irregular depression occurs. The area has ridges & residual hills, ravines & gullies, dissected & faulted Land. The plateau has Low mountain altitude i-e Kalachitta, Margala hills (500 – 900m) in North to South direction. However, Salt ranges are about 750 – 1000m and they are in East to West direction. The highest peak is Sakesar Peak which is about 1527m in height. The plateau also has gorges but not very deep.

The plateau has a limited drainage as it is located in a doab itself. Rivers Soan, Khewra, Makrachi streams are the prominent here. The famous is Lake Kallar kahar while others are Khabeki and Uchchali. The area mainly depends on the rainfall for agriculture, barani farming.

The Potwar plateau has better economic sources. Major industry of oil refinery, HMC Taxila etc are located here. Mining creates job opportunities in plateau, main minerals are Rock Salt, Marble, Clay, Oil and Coal. Agriculture is limited (wheat, pulses, oil seeds) due to Barani farming. The area also earns foreign remittances as numbers of workers are employed in abroad. The overall economy is strong with high per capita income.

Picture showing Badland Topography



Balochistan Plateau

The Balochistan Plateau Located in south-west. It has an Altitude ranging from 600- 3010 meters. The hills and ranges in the south of Balochistan plateau are lower than the North ones.

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Northern Baluchistan has number of irregular depressions such as Zhob & Loralai basins. The valleys include Quetta, Ziarat, Pishin etc surrounded by high and consequently cold mountains. Mountain Ranges: The plateau is covered with a number of barren mountains with an altitude of 600 to 3010 m. Chagai hills, Ras Koh, Hala Ranges, Makran Coast Ranges, Centreal Brahui Ranges, Toba Kakar Range, Siahn Range etc .Balochistan plateau has no. of passes in it like Bolan, Ghonsher & Kojak. The wide topography of Balochistan also has the plains of Kachi Sibi and lasbela that leads to the coastal area of Makhran (coast of Makhran).

Balochistan has number of small rivers that ends and fall in different physical features. Details are as follows:

- Join Indus... Zhob, Khandhar and Kalachi
- Absorb in land...Bolan, Mula, and Chakar
- Fall in Arabian sea...Hub, Porali, Hingol and Mushkai

The inland drainage basins of these rivers, has no outlet to the sea, causing temporary lakes to form. These temporary lakes are called Hamuns in local language. They are salt lakes water is evaporated and a salt pan is left behind. Largest temporary lake is called Hamun-i-Mashkel, located near Kharan Desert. Most of the rivers are seasonal small and narrow and also have less quantity of water in it. These rivers get active in summer (melting of snow) and winter (western depressions). The young streams are formed by the melting of snow especially near Quetta and Ziarat valleys. Karez are the important features of Balochistan plateau, they are the underground canal for irrigation usually starts at the foot of mountains and extended to several kilometers.

Plains

Plains are the open wide and flat land (undulating land) that has rivers and related features onto it. Plains of Pakistan are divided in two:

- Upper Indus Plain... Whole of Punjab
- Lower Indus Plain... Whole of Sindh

The slope of these plains reduces from UIP to LIP i-e southward. It has 04 Interfluves or Doab, The tract of land between two adjacent rivers, namely as Sindh Sagar, Chaj, Rachna and Bari doab. A doab has the prominent feature like AFP, OFP etc. Details are as under.

Active Flood Plain is the narrow strip of land on both sides of the river is called active flood plains. It is known as bet or khaddar land. It is flooded almost every year in rainy season. (July-September). At the end of rainy season the land is marked with dry and braided channel, rich in alluvium. These are good farming areas of Pakistan because it is covered with alluvium soil. They are found in all the rivers except Southern half of River Ravi due to low volume of water. Maximum widths of these doabs are 24-40 km along River Indus and 3-5 km along River Ravi. Meanders, ox-bow lakes and levees are its important features. It is 2m high from river, up to 25km from river

Old Flood Plain/ Cover Flood Plain cover the areas between alluvial terraces and active flood plain. Only flooded when there is heavy rainfall. They are covered with old alluvial. Meanders scars, remaining of ox-bow lakes and levees are its main features. It is about 3-5m in height, 25 to 40 km from river.

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Scrap is a slope that separate Old Flood Plain from Bar Upland/Alluvial Terraces. It is around 20m long and 11m high from river level. It is made up of old alluvial and formed due to the erosion of alluvial terraces.

Bar Upland / Alluvial Terraces are areas of higher ground between rivers formed by erosion of old alluvial 5-15m. Its surface is flat and has a South West slope. They are also called scalloped interfluvies. These bars are ideal for agriculture with the help of irrigation facilities. Kirana Bar on Chaj Doab, Sandal bar on Rachna Doab, Gangi Bar & Nili Bar on Bari Doab are located. It is 45 to 75 km from river, 8-9m in height from river

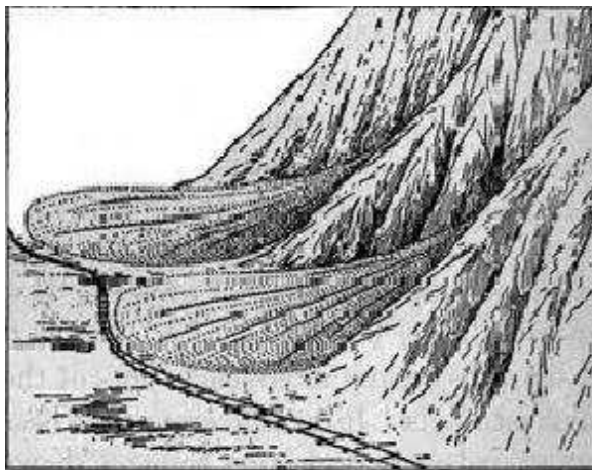
**oxbow lakes are crescent-shaped lake formed when a river break across the neck of a well-developed meander.*

**Meander is a loop-like bend, a pronounced bend or loop in the course (path) of a sluggish (wild) river or it is the path of the river.*

Piedmont Plains are located on the foothills of the Sulaiman, Kirthar and Himalayan Mountains. They are suitable for agricultural especially the Sulaiman Piedmont Plain. Most important features are the alluvial fans or cones that develop eastwards from Sulaiman & Kirthar ranges. Rivers coming from these ranges have low and slow water flow and form alluvial fan

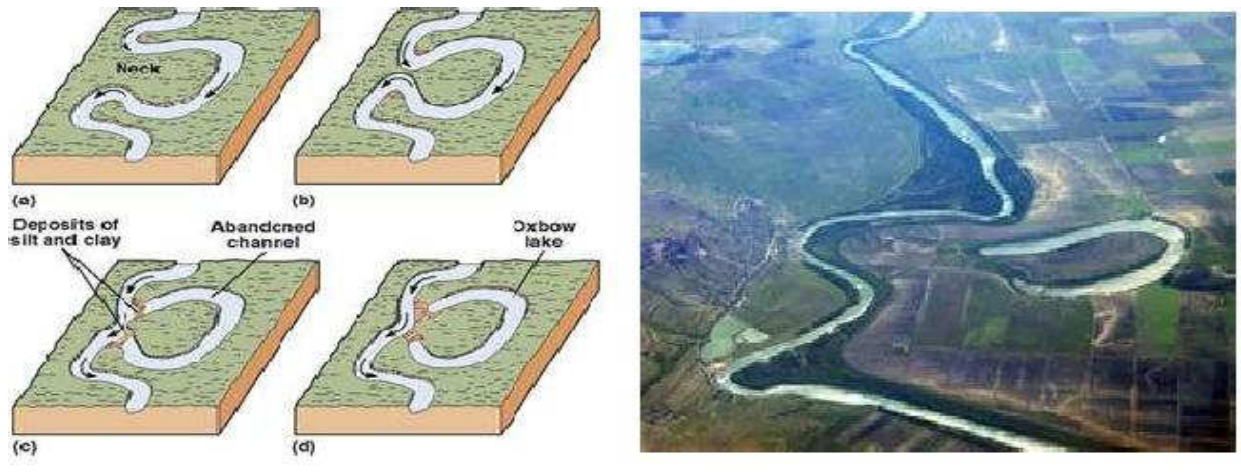
**Alluvial Fans are deposit made by a river at the base of a hill. These occur when the gradient of a riverbed decreases suddenly, as when a river emerges from a mountain.*

Piedmont Plains... Alluvial fans/cones



Ox Bow Lake (Formation and Aerial view)

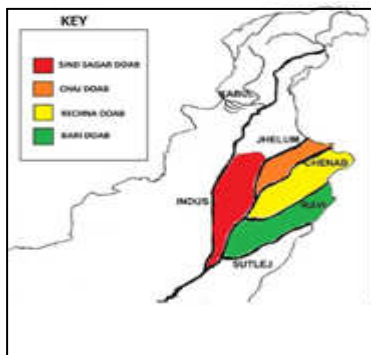
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Map Showing Rivers of Pakistan



Map Showing Doabs in Plains



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**Cuesta is a landform consisting of an asymmetrical ridge with an abrupt cliff or steep slope. They provide firm foundation for the construction of barrages. The biggest cuesta is Rohri Cuesta about 75 km long in Lower Indus Plain. Usually cuestas are limestone ridges, eroded by weathering.*

Diagram showing Cuesta



The drainage features mainly consist of rivers, streams, canals, lakes, and oxbow lakes. The drainage pattern is wide and dense mainly because of different types of canals. The details are as follows:

- Rivers...Indus, Jhelum, Chenab, Ravi and Sutlej
- Rivers are wide and join each others...Indus merges with other river at Mithan Kot
- Large and long rivers with more volume of water.
- Canal colonies...wide spread
- Lake...Ox bow lake and other convectional lakes
- Braided channels and meanders

The overall life is easy and comfortable. People use light and cotton clothes during hot & mild even cool temp. All type of diet is available and used by the people. Concrete houses with flat roofs are mostly seen. All major cities are lying in the Plains like Karachi, Lahore, and Faisalabad etc. They are well connected with (infrastructure) roads, railways and air. Utilities are widely spread and available but due to over population of big cities problem are also arising. Main educational institute (universities, technical institute etc) and advance health centres are located. Population density of Plain areas is high.

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Desert

Pakistan has 03 hot deserts, located in Sindh, Punjab and Balochistan. The details of these deserts are as follows:

DESERTS (Thar, Thal & Kharan)					
Areas	THAR			THAL	KHARAN
	<i>Thar</i>	<i>Nara</i>	<i>Cholistan</i>	Khushab	Kharan
	Thar	Khairpur	Rahimyar Khan	Bakkar	
	Umer kot	Sukkur	Bahawalpur	Laieh	
	Sanghar	Ghotki			
Relief	Sand dunes 10m in height...sand dunes Rolling sandy plains Sandy soil Tough & crest				
Drainage	Naran River Thar canal Oasis				
Economy	Cottage industry Limited livestock farming...Thari cattle Mining ...Oil and Coal...Thar Limited Agriculture (wheat, cotton, sugarcane)...Thar & Thal Low per capita income...less employment opportunity				
Life style	Overall difficult life Thick clothes... prevent them from high sun rays. Diet...meat, milk (shortage of food) Unsafe drinking water (shortage of water) Poor infrastructure (roads, utilities) Population density is low Mud Houses...special construction to prevent them from wind storm				

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Different Types of Sand Dunes...Longitudinal, Latitudinal and Crescent

