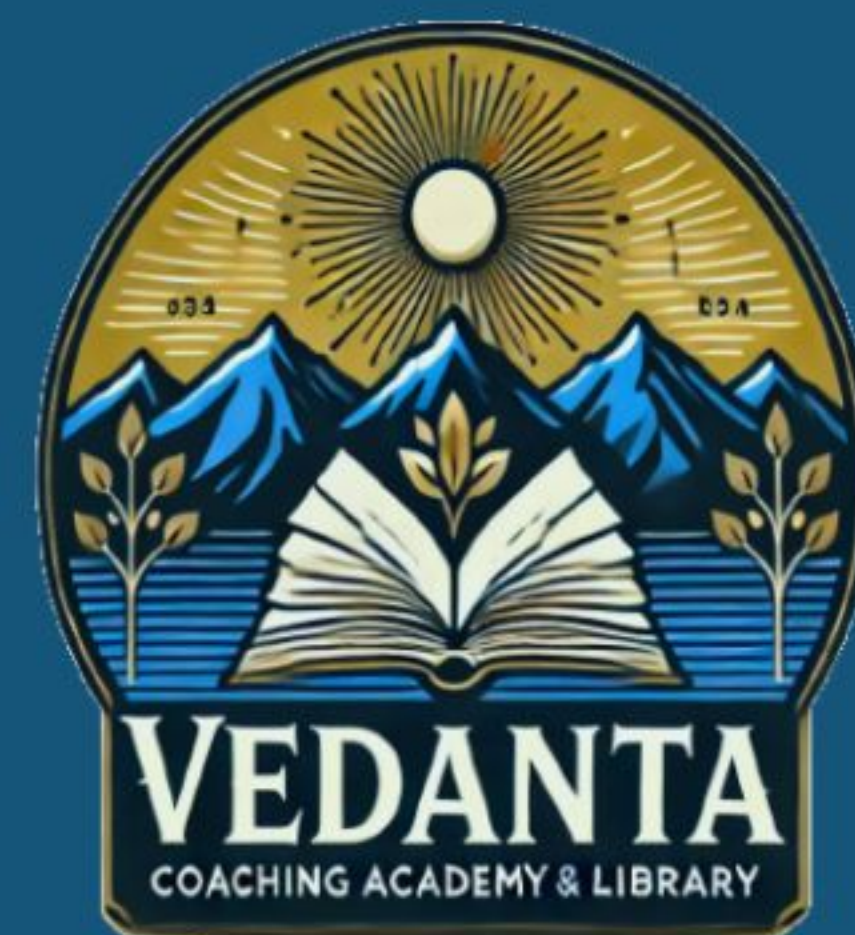


CHAPTER 1



GEOGRAPHY OF HIMACHAL PRADESH

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imachal Pradesh, the mountainous northern state nestled in the western Himalayas, is a land of striking physical contrasts – from the low Shivalik foothills in the south to the icy crests of the Greater Himalaya in the north. This chapter surveys the physical geography of the state: its location and extent, its three great topographic belts, climate and physiographic zones, the rivers and their tributaries, the lakes and thermal springs, the valleys and glaciers, and finally the high mountain passes and peaks that lace its frontier.

IN THIS CHAPTER

- 1.1 Location and Extent
- 1.2 Topographic Divisions
- 1.3 Physiographic Zones & Climate
- 1.4 The River System
- 1.5 Lakes, Hot Springs & Cold Springs
- 1.6 Valleys & Glaciers
- 1.7 Mountain Passes & Peaks

1.1 Location and Extent

Himachal Pradesh lies between **30°22' and 33°12' North latitude** and **75°47' and 79°4' East longitude**. It is bounded by Tibet to the east; Jammu & Kashmir and the Ladakh UT to the north; Uttarakhand to the south-east; Haryana to the south; and Punjab to the west.



Figure 1.1 Political map of Himachal Pradesh (not to scale).

1.2 Topographic Divisions

Topographically, Himachal Pradesh is divided into three zones running from south to north: the lower hills or Shivaliks, the inner Himalayas or mid-mountains, and the alpine zone of the Greater Himalayas.

The Lower Hills or Shivaliks

- **Location & characteristics:** These lower hills – also called the Outer Himalayas – are found in the districts of Kangra, Hamirpur, Una and Bilaspur and in parts of Mandi, Solan and Sirmaur. They receive 1,500–1,800 mm of annual rainfall and range in altitude from 350 to 1,500 metres (1,050–4,500 feet) above sea level.
- **Historical name & composition:** In ancient times the Shivalik Hills were known as '**Manak Parbat**'. The name 'Shivalik' literally means “tresses of Shiva”. They are composed of highly unconsolidated deposits, which makes them prone to erosion.
- **Environmental impact:** Deforestation and high erosion rates here lead to the formation of 'Chos' (small streams), which have contributed to the sandy tracts in the plains below.
- **Famous places:** Paonta Valley, Nahan, Pachhad and Renuka tehsils in Sirmaur; Balh Valley and Joginder Nagar in Mandi; and Kangra, Nurpur, Dehra, Jawali, Palampur, Dalhousie, Bhattiyat and Churah in Chamba.

The Inner Himalayas (Mid-Mountains)

- Ranging from 1,500 to 4,500 metres, this zone rises gradually towards the Dhauladhar and Pir Panjal ranges.
- It includes Pachhad and Renuka (Sirmaur); Chachiot and Karsog (Mandi); Kangra and Palampur (Kangra); and Dalhousie, Bhattiyat and Churah (Chamba).
- The soil varies from silty to clay loam and is suitable for maize, wheat and fruits.
- The prominent ranges are the **Pir Panjal** in Chamba and the **Dhauladhar** in Kangra, Chamba and Mandi. The Dhauladhar is also called the 'White Peak'. It branches off from the Great Himalayan range near **Badrinath** (Uttarakhand) and forms the most striking features; it is intercepted by the Satluj at **Rampur-Bushahr**, by the Beas at **Larji**, and by the Ravi. The northern flank of the Dhauladhar impinges against the southern flank of the Pir Panjal at the mountain knot of **Bara Banghal**.

The Greater Himalayas (Alpine Zone)

- At altitudes of 4,500 metres and above, this zone lies north of the Pir Panjal and Dhauladhar ranges and includes the lofty Greater Himalaya and the Zaskar ranges.
- The Great Himalayan range runs along the eastern boundary and is cut across by the Satluj; it separates the drainage of the Spiti from that of the Beas.
- This zone comprises Kinnaur district, the Pangi tehsil of Chamba district and some areas of Lahaul and Spiti.

1.3 Physiographic Zones & Climate

Himachal Pradesh is further divided into five physiographic zones:

- **Wet sub-temperate zone:** Palampur, Dharamshala, Joginder Nagar and Dalhousie.
- **Humid sub-temperate zone:** Kullu, Shimla and parts of Mandi, Solan, Chamba, Kangra and Sirmaur.
- **Dry temperate, alpine high lands:** Lahaul-Spiti, Pangi and Kinnaur.
- **Humid sub-tropical zone:** Bilaspur, major parts of Mandi, Nahan, Bhattiyat valley, Nalagarh, Hamirpur, Dehra and Nurpur.
- **Sub-humid tropical zone:** Una, Paonta Sahib and Indora.

Climate and Seasonal Variation

The year is divided into three seasons – Cold (October–February), Hot (March–June) and Rainy (July–September) – known locally as *Sardi/Thandi*, *Garmi* and *Barsat* respectively. The Himalayas, often called the ‘weather maker of Asia’, govern these changing seasons, and the monsoon plays a significant role in shaping the region’s character.

1.4 The River System

Himachal Pradesh is home to several important river systems, fed chiefly by glaciers and monsoon rains. The five major rivers – the **Chenab, Ravi, Beas, Satluj and Yamuna** – all originate in the Himalayas and flow through deep gorges and valleys, forming fertile plains and supporting agriculture and hydroelectric power. The **Satluj is the longest river in the state**, while the Beas flows entirely within Himachal. All these

ivers belong to the Indus system except the Yamuna, which belongs to the Ganga system. They are crucial for irrigation, drinking water and hydro projects such as Bhakra-Nangal and Nathpa Jhakri.



Figure 1.2 River map of Himachal Pradesh (not to scale).

The Yamuna River

The Yamuna enters Himachal Pradesh at **Khadar Majri** in Sirmour district. It is the largest tributary of the Ganga and has a mythical relation to the Sun. Rising from **Yamunotri** in the Garhwal hills, it leaves the state near **Tajewala** and enters Haryana, flowing nearly **22 km** within Himachal. Its Vedic name is **Kalandi**.

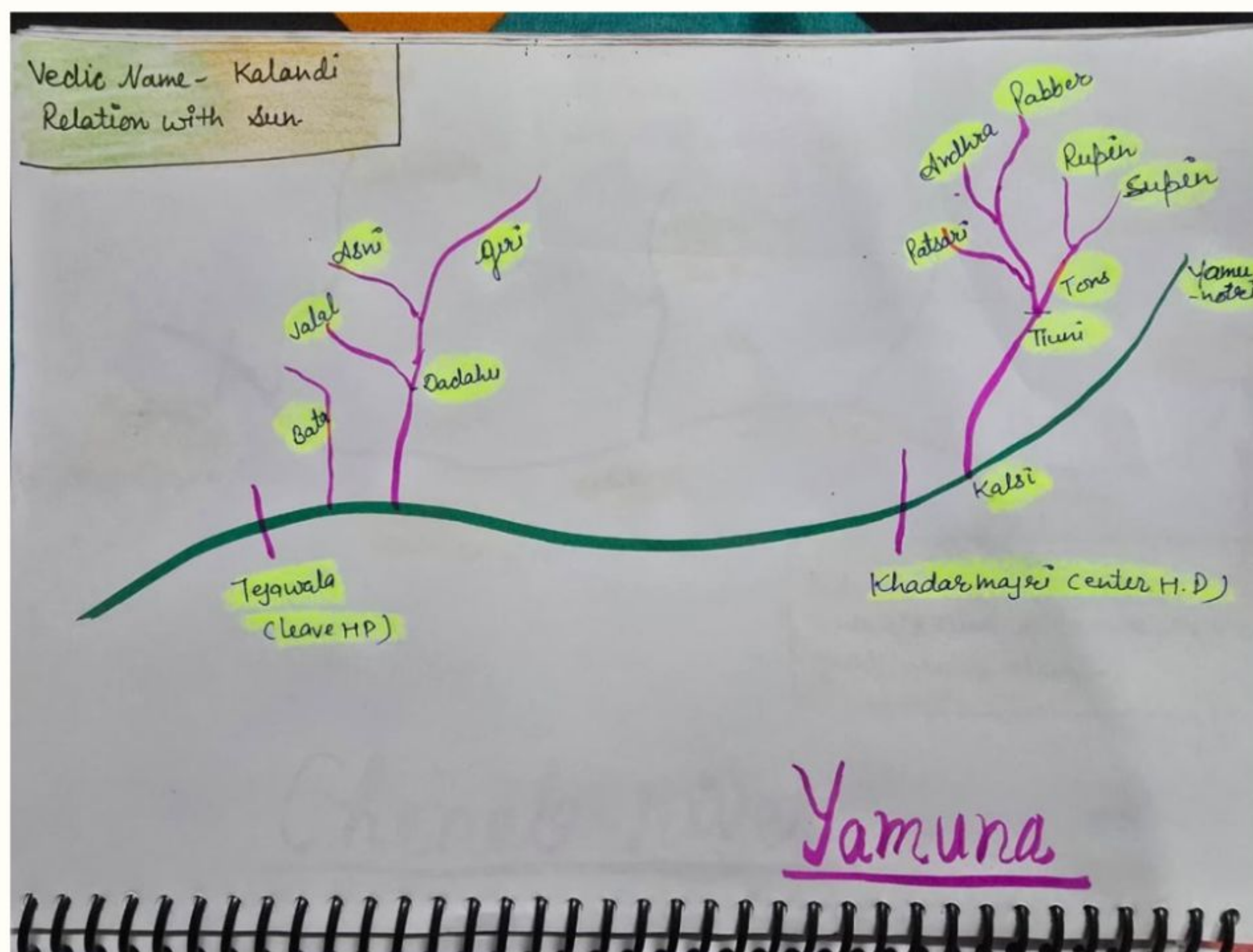


Figure 1.3 Course and tributaries of the Yamuna (student diagram).

Tributaries

- **Jalal River:** A small tributary of the Giri; it rises from the **Dharthi ranges** adjoining Pachhad and joins the Yamuna at Dadahu from the right side.
- **Markanda River:** A small river in the Nahan area of Sirmour; it rises from the southern side of the lower Himalayas on the western extremity of the Kiarda Dun (Paonta) Valley.
- **Andhra River:** Originates from a small glacier in the lower hills northwest of Chirgaon in Shimla district; a tributary of the Pabbar, which in turn drains into the Tons.
- **Giri River:** An important tributary of the Yamuna draining south-eastern Himachal. The Giri (or Giriganga) rises from **Kupar peak** above Jubbal town and, flowing through the Shimla hills in a south-easterly direction, divides Sirmour into two equal parts – the **Cis-Giri** and **Trans-Giri** regions – before joining the Yamuna upstream of Paonta (below Makkampur).
- **Asni River:** Rises from the Dharthi ranges near Pachhad and joins the Giri at Dadahu; a tributary of the Giri, which drains into the Yamuna.
- **Bata River:** Originates below the **Nahan ridge** in the south-western corner of the state as the **Jalmusa-ka-Khala**. Its small tributaries in the Paonta Valley are:
 - **Khara-Ka-Khala**, flowing southward from the Nahan ridge.
 - **Kanser Khala**, originating from the southern slopes of the Nahan (Kanser ridge).
- **Pabbar River:** A tributary of the Tons (which drains into the Yamuna). It rises from the southern slopes of the Dhauladhar near the UP–Himachal border, from the **Chander Nahan** glacier in Shimla district.
- **Patsari River:** A small, spring-fed tributary of the Pabbar, rising from the lower Himalayan hills near Kharapathar in Shimla district.

The Satluj River

The Satluj rises beyond the Indian border on the southern slopes of the Kailash mountain near **Mansarovar Lake**, from **Rakas Lake**, as the **Longchen Khabag** river (in Tibet). The largest of the five rivers of Himachal, it enters at **Shipki** (altitude 6,608 m) and flows south-westward through Kinnaur, Shimla, Kullu, Solan, Mandi and Bilaspur, covering 320 km within the state from Rakastal before leaving at Bhakra. Its Vedic name is **Satudri**, its Sanskrit name **Shatadru**, and its Greek name **Zaradros / Hesidros**.

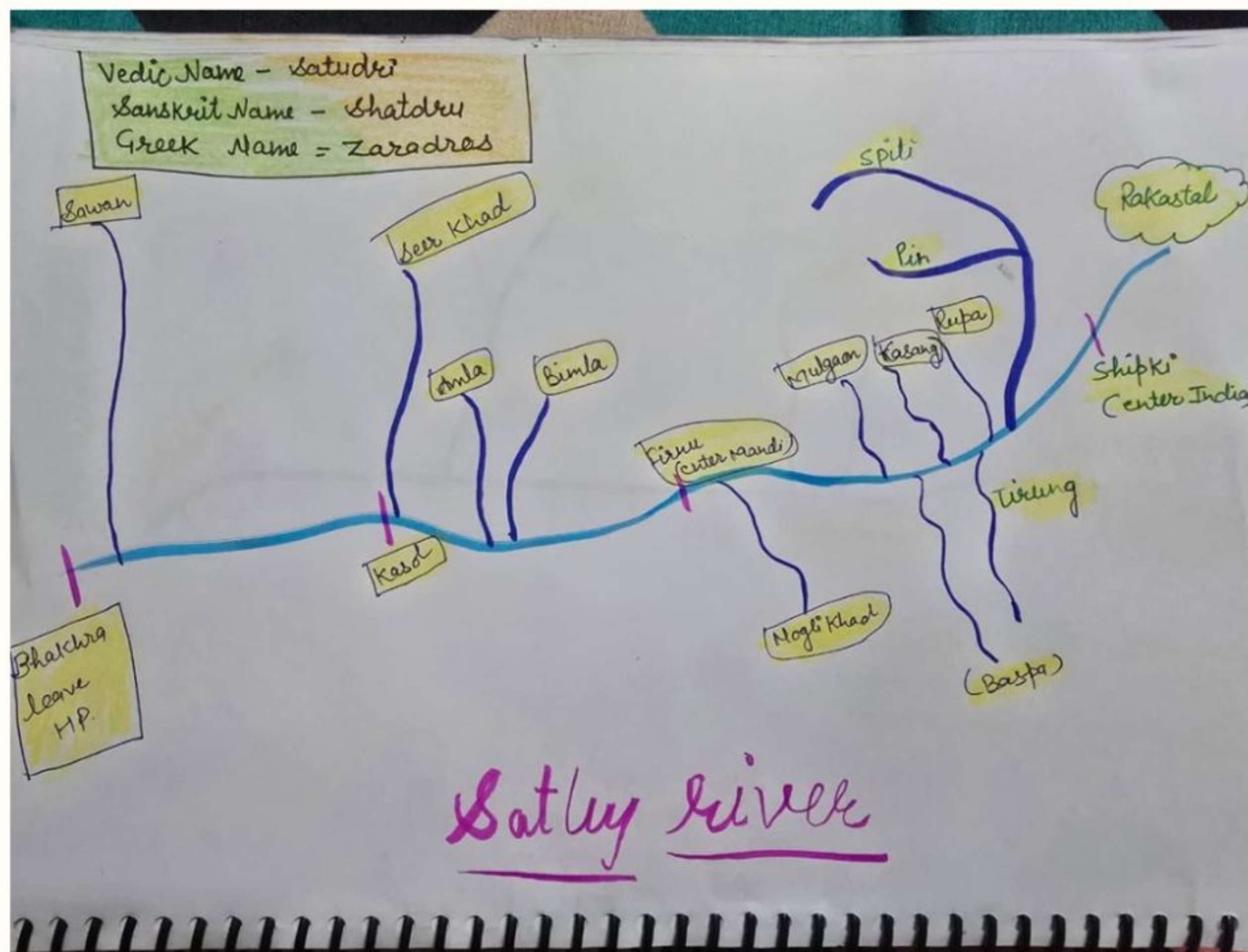


Figure 1.4 Course and tributaries of the Satluj (student diagram).

Tributaries

- **Baspa River:** Originates near the Indo-Tibetan border from the Baspa Hills; an important tributary in the Satluj's upper course. Joined by many snow-melt channels, it cuts across the main Himalayan range and joins the Satluj at Karcham.
- **Spiti River:** Originates from the Kunzum range; its tributaries are the Tegpo and Kabzian streams. After flowing through Spiti valley it meets the Satluj at **Namgia** in Kinnaur. Main settlements along it are Hansi and Dhankar Gompa.
- **The Nogli Ghad (Khad):** Originates as the Sageti Gad stream east of a 5,236-m peak on the Kumashi Kharang Dhar in Kinnaur and joins the Satluj below Bushahr. It touches Kullu (Nirmand tehsil) opposite Rampur tehsil of Shimla; the Satluj enters Mandi near Firnu village in the Chawasigarh.
- **Soan River:** Rises from the southern slopes of the Shivalik (Solasinghi) range east of the Beas gap, across the southern periphery of the Kangra valley.

The Beas River

On the right of the Rohtang pass lies the source of the Beas, also known as **Beas Rishi**, where Maharishi Vyas – the great thinker and writer of the Mahabharata – meditated. To the south lies another source, **Beas Kund**; the two mountain streams meet at **Palachan** village, 10 km north of Manali, to form the river. In ancient times it was known as **Arjiki**. Legend holds that when Vishwamitra killed a hundred sons of Rishi Vashisht, the grieving Muni Vashisht tied himself with ropes and jumped into the Arjiki, but the river freed him by removing the rope – the spot is now Vashisht village, and the river came to be called **Vipasha**. The Beas is vital for irrigation in Punjab and Pakistan and has nurtured Manali, Kullu and Mandi. Its Vedic name is **Arjiki** / **Arjikiya**, Sanskrit **Vipasa** and Greek **Hyphasis**; it forms the famous valleys of Kullu and Kangra.

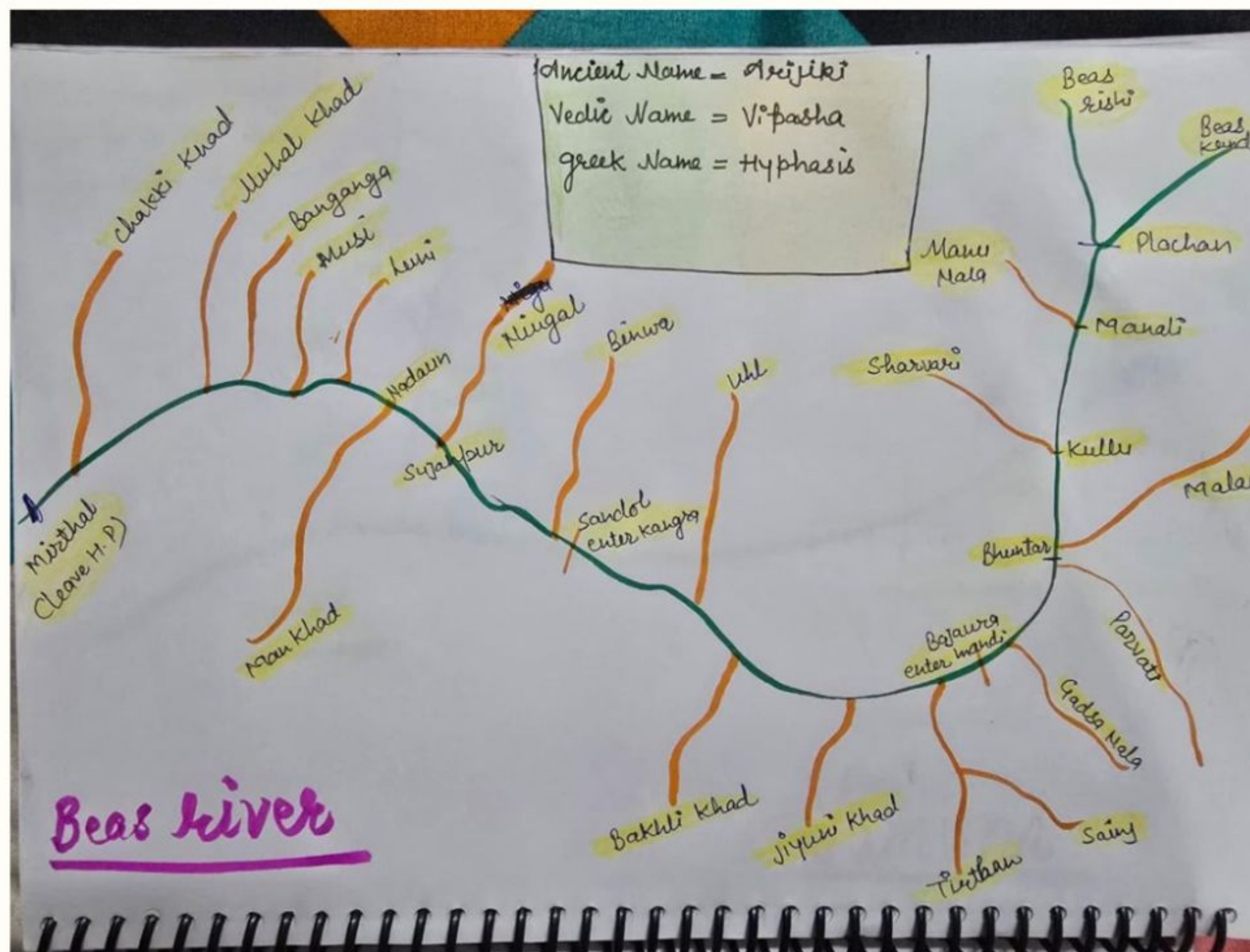


Figure 1.5 Course and tributaries of the Beas (student diagram).

Tributaries

- **Awa River:** Rises from the Dhauladhar in the Kangra Valley; flows south-westerly before joining the Beas.
- **Baner (Baner Khad) River:** Drains the central Kangra Valley; originates as a snow-fed channel on the southern Dhauladhar slopes near Palampur.
- **Banganga River:** Joins the Beas in the Kangra valley; rises from the southern slopes of the Dhauladhar.
- **Chakki River:** Drains the south-western part of the state; rises as a snow- and rain-fed stream from the southern Dhauladhar slopes.
- **Gaj River:** Rises from the snows on the southern Dhauladhar slopes in Kangra district.
- **Harla River:** Rises in the depression of the north-western flank of Kullu Valley; joins the Beas near Bhunter.
- **Luni River:** Rises from the southern Dhauladhar slopes; merges with the Beas in central Kangra valley.
- **Manuni River:** Rises from the southern Dhauladhar slopes; joins the Beas at Haripur (Kangra).
- **Parvati River:** Rises in the snowy wastes upstream of Manikaran on the main Himalayan foothills in Kullu; joins the Beas at Shamshi.
- **Patlikhul River:** Originates near Rohtang Pass in Kullu; a tributary of the Beas in the Manali area.
- **Sainj River:** Rises from the water-divides of the Beas and Satluj in the lower main Himalayas east of Kullu.
- **Suketi River:** A tributary in the Kangra Valley; rises from the south-facing Dhauladhar slopes.
- **Tirthan River:** Rises from the base of an offshoot of the main Himalayan range south-east of Kullu.
- **Uhl River:** Originates from the Thamsar glacier in the Dhauladhar near Barabhangal (Kangra); rises as two feeder channels north of the Dhauladhar.

The Chenab River

The Chenab is formed by the confluence of two streams, **Chandra and Bhaga**, which originate from the **Baralacha Pass** in the Lahaul region. Flowing through the Pangi Valley in Chamba and via the Sansari Nala, it enters the Padar Valley in Jammu and Kashmir. Of its total length of about 1,200 km, roughly 122 km lie in Himachal. It is the **largest river in Himachal by water volume**, and its valley is a structural trough between the Himalayan and Pir Panjal ranges. Sanskrit name **Chandarbhaga**; Vedic **Askini**; Greek **Akesines**.

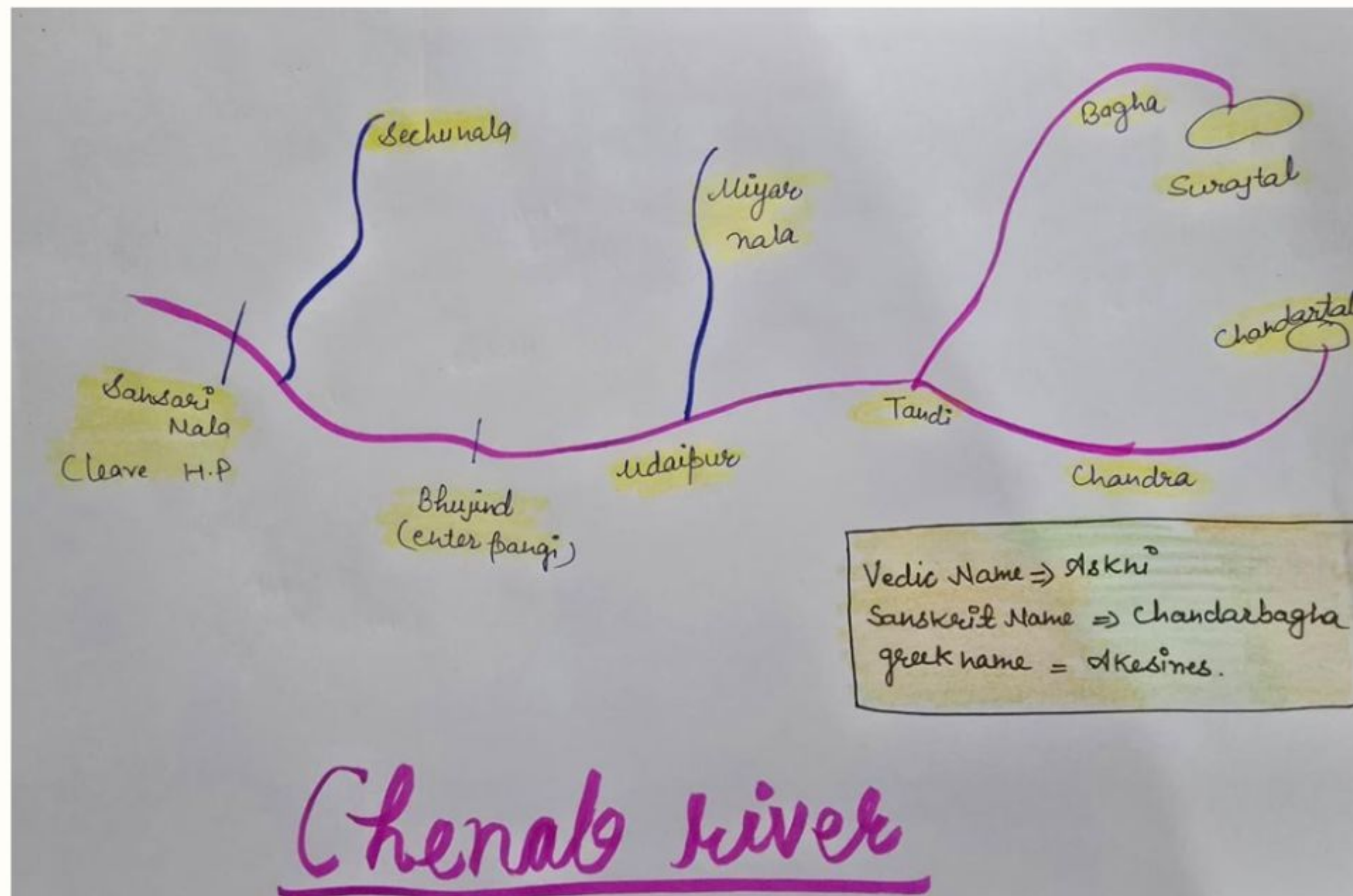


Figure 1.6 Course and tributaries of the Chenab (student diagram).

Tributaries

- **The Miyar Khad:** Originates near Lopen Jot and flows south-east about 35 km before turning south-west; joins the Chenab in Lahaul, while the Saicher Khad joins it in Pangi valley.
- **Bhaga River:** Originates from the Lahaul valley; several snow-fed rivers join it before it meets the Chandra stream at Tandis.
- **Chandra River:** Rises in the snow at the base of the main Himalayan range in Lahaul-Spiti, from Chandartal; the important settlement along it is Koksar.

The Ravi River

The Ravi originates from **Bara Banghal**, a branch of the Dhauladhar, formed by the Badal and Tant Gari glaciers. It flows through the picturesque Chamba Valley past the foot of Dalhousie hill, acting as a natural divider between the Pir Panjal and Dhauladhar ranges, and eventually merges with the Chenab in Pakistan. Of its total length of about 720 km, roughly 158 km lie in Himachal. Alexander's historians called it **Hydraster** or **Rhouadis**; it is associated with ancient settlements such as Bharmaur, Madhopur and Chamba town. Sanskrit name **Iravati**; Vedic **Purushani**; Greek **Hydraster**.

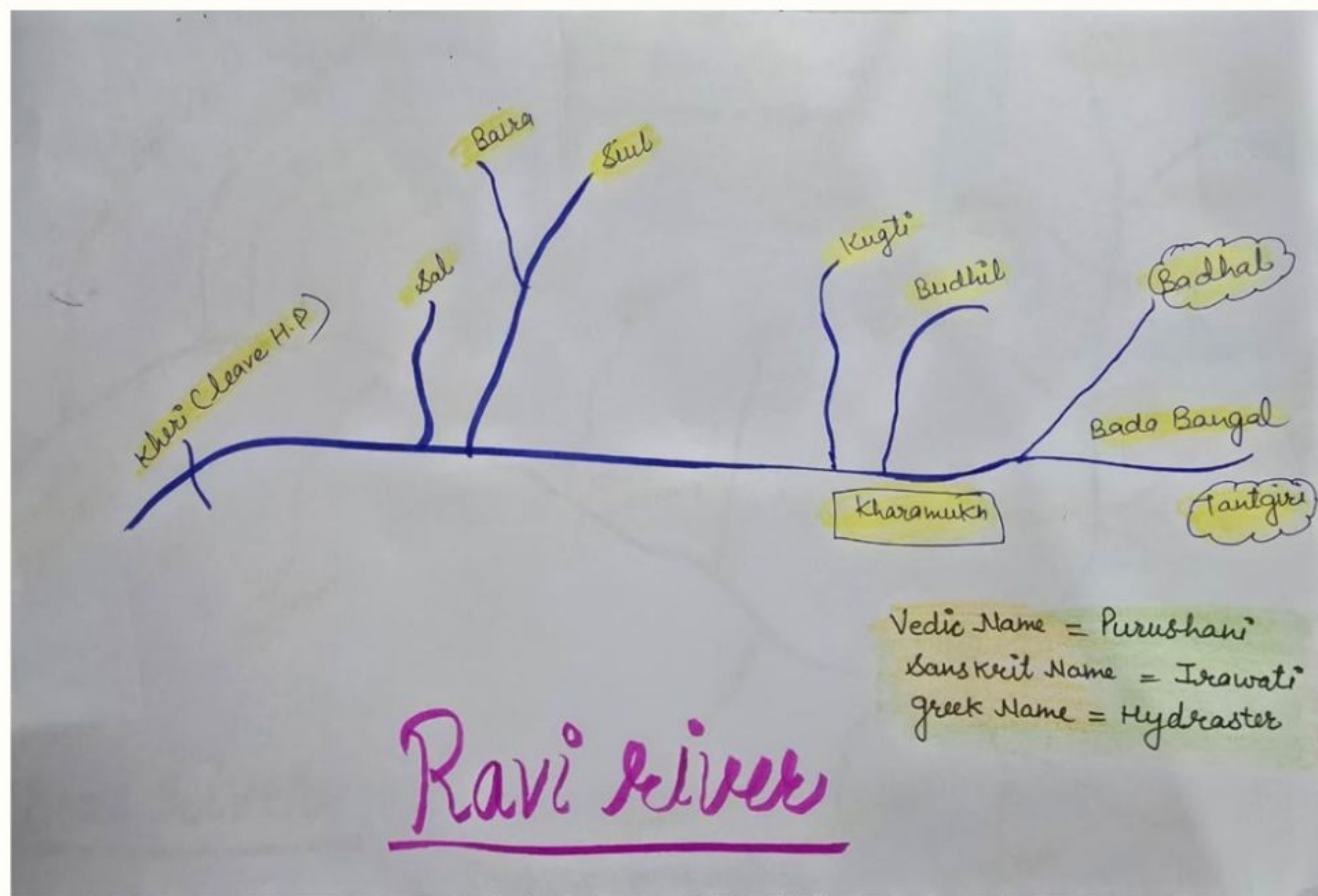


Figure 1.7 Course and tributaries of the Ravi (student diagram).

Tributaries

- **Bhadal River:** Rises from the snowy range between the Pir Panjal and Dhauladhar in the Bara Banghal area of central Himachal.
- **Siul River:** Rises from the tracts between the Dhauladhar and Pir Panjal near the J&K–Himachal border.
- **Baira River:** Rises from the southern slopes of the Pir Panjal.
- **Tant Hari:** Rises as a small stream from an offshoot of the Pir Panjal east of Bharmour in Chamba.

Rivers and their Settlements

River	Principal Settlements
Satluj	Namgia, Kalpa (Kinnaur); Rampur, Sunni (Shimla); Tattapani (Mandi); Bilaspur
Spiti	Dhankar Gompa, Hansi (Spiti)
Beas	Manali, Naggar, Katrain, Raison, Kullu, Bajaura (Kullu); Pandoh, Mandi (Mandi); Sujanpur Tihra, Nadaun (Hamirpur); Dehra Gopipur (Kangra)
Parbati	Manikaran, Kasol (Kullu)
Chenab	Udaipur (Lahaul); Killar (Pangi, Chamba)
Chandra	Koksar, Keylong (Lahaul)
Ravi	Bharmour, Madhopur, Chamba (Chamba)
Pabbar	Chirgoan, Rohru, Nerwa (Shimla)
Jalal	Dadahu, Bhagthan (Sirmour)
Giri	Jubbal (Shimla)

1.5

Lakes, Hot Springs & Cold Springs

Natural Lakes

- **Ghadasaru:** In Chamba, 24 km from Tissa (72 km from Chamba); at 3,505 m MSL with a circumference of nearly 1 km.
- **Khajjiar:** In a grassy meadow, 1.5 km long and 1 km wide, ringed by cedar forest; a small lake, the Kund, forms its centrepiece, with a temple to 'Khajjiar nag'. 24 km from Dalhousie; known as 'Mini Switzerland', christened by Swiss Envoy Willy P. Blazer on 7 July 1992.
- **Lama (Lama Dal):** 45 km from Chamba on the inner Dhauladhar slopes; a group of seven lakes, the largest being Lama Dal at 3,962 m (13,200 ft); 20 km from Dainkund. Gaddi tribals visit on Janmashtami.
- **Manimahesh:** 35 km from Bharmour at 3,950 m, at the foot of Mount Kailash (5,660 m) – perhaps the highest sacred water in Chamba. Said to be blessed by Kali and protected by Lord Shiva; an annual fair is held in August/September.
- **Mahakali:** In Chamba at 3,657 m; a little larger than Khajjiar and Manimahesh, in the Churah area; dedicated to goddess Kali.
- **Chanderkup:** At 3,450 m (14,000 ft); one of many lakes in the upper regions of Chamba towards Dharamshala.
- **Dal:** In Kangra, 11 km from Dharamshala; amid hills and fir trees, also known as Bhogsu Nag; dedicated to 'Lord Driveswar', built by Sage Agastaya.
- **Kareri:** 35 km from Dharamshala at 1,810 m; ringed by meadows, oak and pine; its water falls into the Layun river.
- **Kumarwah:** 40 km from Mandi town; also called Kamrunag Lake; in Chachyot tehsil at 3,150 m.
- **Rewalsar:** About 25 km from Mandi; an important pilgrimage centre famous for its floating island; sacred to Buddhists, Hindus and Sikhs.
- **Kunt Bhayog:** At the hilltop of Rewalsar town at 1,700 m, enclosed by hills on two sides; about 12–15 m deep at the centre.
- **Kalasar:** At 1,755 m MSL, at the top of Rewalsar town.
- **Prashar:** At 2,743 m, 30 km from Mandi town, in a cup-like valley; a pagoda-style three-storeyed temple of Prashar Rishi stands here.
- **Bhrigu:** At 4,235 m near Rohtang pass; about 3 m deep.
- **Servalsar:** At the top of Jalori Pass in Kullu at 3,100 m; 20 km from Banjar towards Anni.
- **Chandranahan:** On Chanshal peak in Rohru tehsil, Shimla, at 4,267 m; the Pabbar river originates here.
- **Tanu Jubbal:** Near Narkanda, in Shimla district.
- **Karali:** On the Chhota Shali hillock opposite Shali peak; about the size of Shimla's Annadale ground.
- **Nako:** Near Nako village at 3,662 m; famous for skating in winter. Another lake, 'Sorong', lies in Kinnaur.
- **Renuka:** About 45 km from Nahan; the largest natural lake, with crystal-clear water; related to Rishi Parshuram and Rishi Jamdgini.
- **Saketi:** Near Shivalik Fossil Park in Sirmour; once a lake, now filled with sand and stones.
- **Sukhsar:** At 1,760 m near Rewalsar; surrounded by hills, receiving winter snowfall.

- **Mantilai:** The source of the Parbati river, at 4,116 m amid the Parbati peaks.
- **Shringtingu:** At 4,200 m from Seri; reached via Gohru Nullaha or Bara Banghal, with trekking onward to Jammu Dugh.
- **Suraj Tal:** At 4,800 m; the source of the Bhaga River, opposite Baralacha; about 1,200×1,600 sq m in area.
- **Chandra Tal:** In central Lahaul at 4,270 m; the 'Lake of the Moon'; called 'Lohitya Sarover' by the Chinese pilgrim Hiuen Tsang; nearly 1.5 km long, near Baralacha.
- **Una-so:** In the Lahaul-Spiti district.

Man-Made Lakes

- **Govind Sagar:** An artificial lake formed by the Bhakra Dam on the Satluj, in Bilaspur; famous for water sports and fishing. Bhakra is the world's highest gravity dam, described by Pt. Jawahar Lal Nehru as a 'New temple of Resurgent India'.
- **Pong Lake:** A large reservoir created by the Pong Dam on the Beas; declared a wildlife sanctuary in 1983 and managed by the BBMB. An important habitat for 30,000–50,000 migratory birds of over 50 species annually, including the rare red-necked grebe; threatened by illegal farming, grazing, construction and silt.
- **Pandoh Lake:** 14 km from Mandi towards Aut on NH-21; formed by the Pandoh dam after diverting the Beas to the Satluj at Slapper.
- **Chamera Lake:** Formed by the 540 MW Chamera hydroelectric project on the Ravi near Chamera village in Chamba; 25 km from Dalhousie, visible from the Chamba-Pathankot Highway.

Hot Springs

Himachal is rich in natural springs – ordinary, mineral and thermal – with hot springs especially valued for their medicinal properties.

- **Tattapani:** A sulphur spring in Mandi with reputed healing qualities (partly submerged by the Kol Dam project); 51 km from Shimla and 29 km from Naldera, on the right bank of the Satluj at 656 m.
- **Manikaran:** Many springs over 1.3 km along the Parbati in Kullu (45 km from Kullu), with very high temperatures and natural radioactivity – hot enough to cook food – reputedly curing pneumonia, gout, bronchitis, rheumatism and muscular pains.
- **Kasol:** 1 km upstream of Manikaran and 32 km from Bhunter (site of Himachal's first airport); cooler than Manikaran, opposite Nakhthan village, 42 km from Kullu on the Parbati's bank.
- **Khirganga:** 26 km from Kullu and 10 km from Pulga; hot springs, cooler than Manikaran.
- **Vashisht:** 3 km from Manali on the left bank of the Beas; springs emerge through granitic gneisses; famous for the temples of Vashisht Rishi and Lord Rama.
- **Jeori:** Hot springs in Kinnaur, on the right bank of the Unu Nallah beyond Rampur-Bushahr on the Hindustan-Tibet Road.

Other notable kunds and falls include those of the Kangra Valley (Kopra, Jawalamukhi, Lunani, Salol) and the Satdhara spring near Panjpulla; the waterfalls Rahla (Kullu), Dhanchho (Chamba), Chadwick (Shimla) and Bhagsunag (Kangra); and Kalika Kund in Chamba. The Kopra and Jawalamukhi springs were discovered in 1854, and the Salol spring was identified by Captain A. Colman.

Cold Springs

- **Satdhara** – Chamba (near Panjkulla); **Kopra** – Hamirpur; **Salol** – Kangra (discovered by Captain A. Colman); **Luhand** – Bilaspur.

1.6 Valleys & Glaciers

Valleys are an important feature of Himachal Pradesh – the places where human civilization has flourished in this mountain region.

Major Valleys

- **Satluj Valley:** Carved by the Satluj from Shipki (north) to Bilaspur (south). Entering near the Shipki La Pass in Kinnaur, the river cuts across the Zaskar, Great Himalayan, Pir Panjal and Dhauladhar ranges, shaping a deep, narrow valley with settlements such as Bilaspur, Rampur and Bhabha.
- **Kiarda–Dun Valley:** In the south-eastern corner; also called Paonta valley, in the Markanda and Dharti ranges, with the Yamuna separating it from Dehradun. It has three tracts: the Neli Khera tract; the par-dun tract near Majra village; and the dun proper, between the Yamuna and the lower Dharti/Poka hills, watered by the Giri and Bata streams.



Figure 1.8 Satluj Valley.



Figure 1.9 Kiarda–Dun (Paonta) Valley.

- **Kullu Valley:** The broad, open expanse between Mandi and Larji, sculpted by the Beas; the **only transverse valley** in Himachal, cutting across the ranges. Famed for pine and deodar forests and apple orchards; attractions include Naggar Castle, Nehru Kund, the Roerich Art Gallery, the Hadimba Temple and hot springs.
- **Kangra Valley:** An extensive dun-type valley between the Dhauladhar (north) and the Shivaliks (south), rising from Shahpur through Baijnath to Palampur. Paleolithic hand tools found here mark Kangra as one of the oldest continuously inhabited areas in the Himalayas.

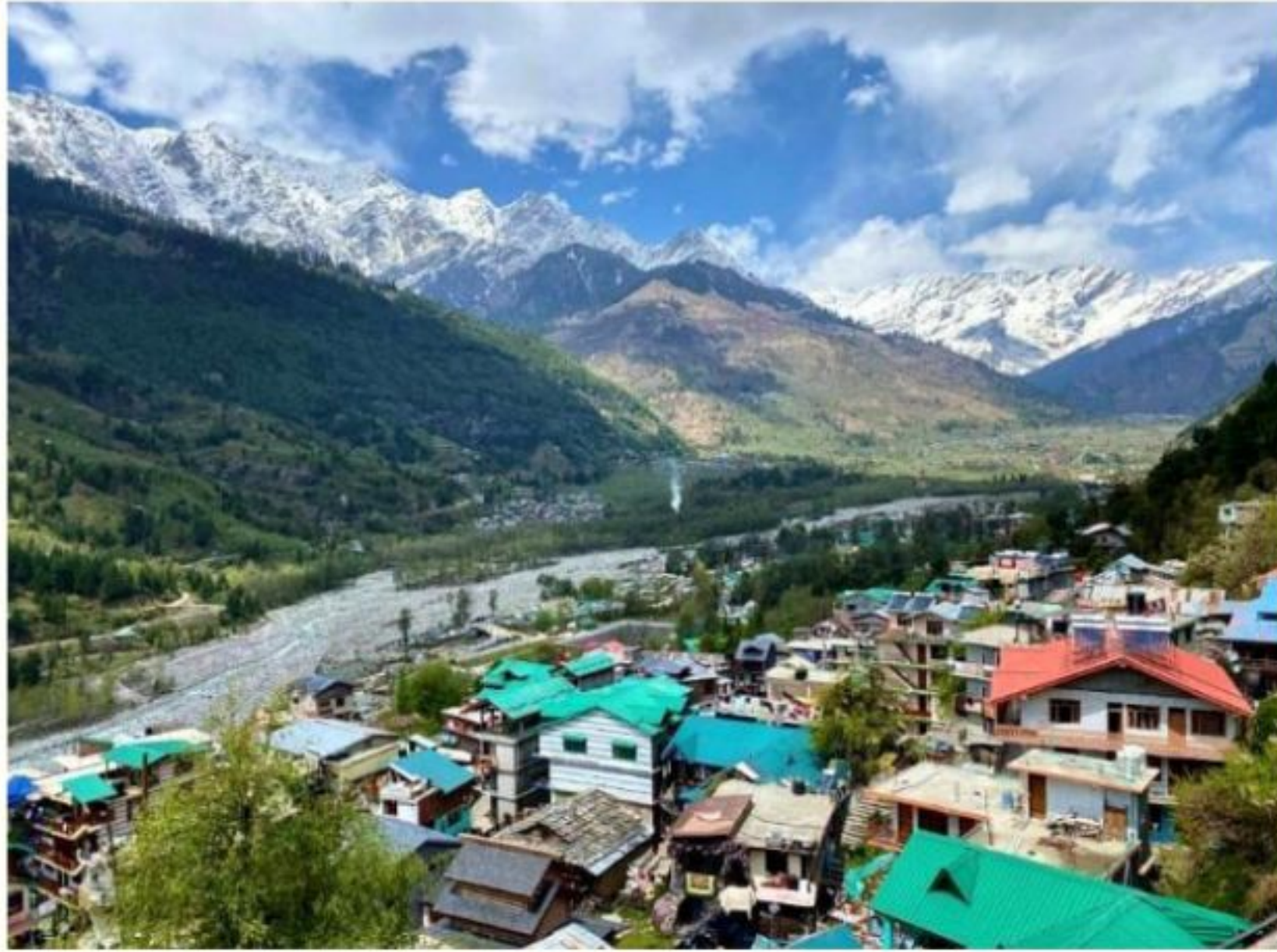


Figure 1.10 Kullu Valley.

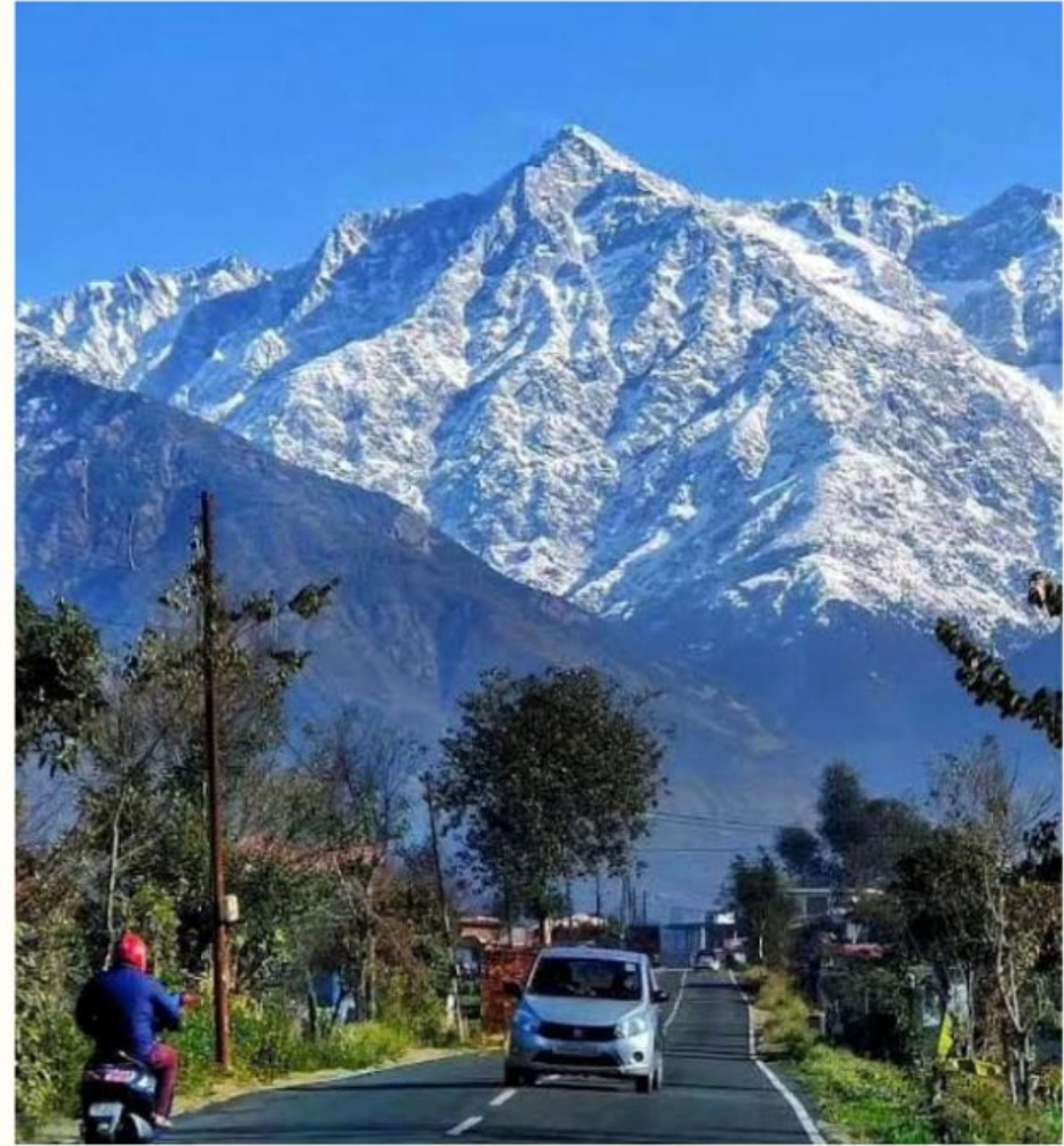


Figure 1.11 Kangra Valley.

- **Bara Bhangal Valley:** Adjoins the Kangra Valley between the Dhauladhar and Pir Panjal, lying partly in Kangra and partly in Chamba. The Ravi originates from its upper slopes; one of the most secluded valleys, inhabited mainly by the Gaddi community.
- **Balh Valley (Sundernagar Valley, Mandi):** An open dun-type valley between an offshoot of the Shimla Ridge (north) and the Shivaliks (south), from Gutker to Sundernagar and Baggi to Gumma, along NH-21 and traversed by the Suketi Khad. The Indo-German Agricultural Project began here in November 1962.



Figure 1.12 Bara Bhangal Valley.



Figure 1.13 Balh (Sundernagar) Valley.

- **Chamba Valley (Ravi Valley):** A picturesque region in the north-west, the ‘Valley of Honey’ for its abundant natural honey.
- **Lahaul & Spiti Valleys:** Lahaul lies north of the Pir Panjal and main Himalaya – the Bhaga valley up to Tandi and the Chenab from Tandi to Udaipur, beyond which lies remote Pangti. Spiti, carved by the Spiti river, lies between the main Himalaya (south) and the Zaskar range (north) – a high-altitude desert.



Figure 1.14 Chamba (Ravi) Valley.



Figure 1.15 Lahaul & Spiti.

- **Baspa Valley (Sangla Valley):** In Kinnaur, sculpted by the Baspa; elevation ranges from ~1,830 m (Baspa–Satluj confluence) to ~3,475 m at Chitkul, the last inhabited village near the Indo-Tibetan border; the Baspa runs ~95 km through it.
- **Pabbar Valley (Rohru Valley):** Drained by the Pabbar, which rises from the Chansal Peak south of Kinnaur; from Hatkoti to Tikri at the base of the Chansal range. Trout were introduced by M. Glover, British Chief Conservator of Forests, in 1938–39.



Figure 1.16 Baspa (Sangla) Valley.



Figure 1.17 Pabbar (Rohru) Valley.

Other Important Valleys (District-wise)

Kinnaur

- **Satluj valley:** From Shipki to Bilaspur; cuts across the Dhauladhar, Pir Panjal, Great Himalayas and Zaskar.
- **Baspa valley:** From Chitkul to Karcham; Chung Shakhago pass lies at its end.
- **Hangrang valley:** Drained by the Lee river.
- **Tidong valley:** The most rugged valley of Kinnaur ('a scene of savage grandeur'), ~32 km long, enclosing Kuno, Charang and Thangi.
- **Chor Gad valley:** Drained by the Chor Gad nallah, at the Kinnaur–Tibet border.
- **Ropa valley:** Also Shyaso/Sunam valley, drained by the Ropa stream; villages Ropa, Giabong, Sunam, Shyaso.
- **Bhaba valley:** Also Wangpo; traversed by the Bhaba stream; the 120 MW Sanjay Jal Vidyut project is here.
- **Nishang valley:** In the Pooh sub-division; leads to Tibet, north of Tirung valley; also called Gyamthang.

Lahaul-Spiti

- **Chandra valley:** Formed by the Chandra river; locally 'rangoli/rongloi'.
- **Bhaga valley:** Formed by the Bhaga river; locally 'Gara'.
- **Chandrabhaga valley:** Combined Chandra–Bhaga valley; locally Pattan valley; 'orchards and granaries of Lahaul'.
- **Spiti valley:** From Kunzum pass to the Spiti–Satluj confluence at Khab; 'Spiti' means 'the middle land'; zones Shain (Lower), Pin, Bhar (Middle).
- **Pin valley:** Within Spiti, drained by the Pin river, a Spiti tributary.
- **Malung valley:** East of Baralacha and Kunzum pass, between the Spiti and Chandra basins.

Kullu

- **Kullu valley:** Between the Pir Panjal, lower and great Himalayan ranges; once believed a vast lake; drained by the Beas; Sainj valley famed for archaeological remains.

Mandi

- **Balh valley:** Sundernagar valley; drained by the Suketi (divides it in two); between the Shimla ridge and the Shivaliks.
- **Imla-Vimla valley:** From Mandi to Shikari Devi temple in Karsog, over the old Suket region; Mamleshwar Kamaksha Devi temple here; the Vimla river rises here.
- **Chauntra valley:** A fertile valley at the Dhauladhar's base in Joginder Nagar; known for tea cultivation.

Solan

- **Kuniyar valley:** From Kuni Khad to Tukardia village.
- **Dun valley:** In Nalagarh tehsil; the most fertile area of Solan.
- **Saproon valley:** 'Happy valley'; the first cultivation of tomatoes in the state took place here.
- **Gambhar valley:** Divides Solan in two; the Gambhar river enters at Shadi village; tomb of Gorkha commander Bhakti Tahpa.
- **Sirsa valley:** From Dagshai; the Baldi River flows through; Nalagarh, Baddi, Parwanoo are industrial centres; quartzite found by Olaf Prufer in 1951.

Shimla

- **Pabbar valley:** Drained by the Pabbar; from Hatkoti to Tikri at the Chansal foothills; also Rohru valley.
- **Green / Hasan valley:** Runs from Shimla to Fagu.

Sirmaur

- **Kiarda Dun valley:** Paonta valley; in the Markanda and Dharti ranges, drained by the Giri and Khala; Yamuna separates it from Dehradun.

Kangra

- **Kangra valley:** Dun-type valley from Shahpur to Baijnath and Palampur; drained by the Beas; between the Dhauladhar and Shivalik; towns Baijnath, Palampur, Kangra, Nurpur, Dharamshala.
- **Bara Banghal valley:** Between the Dhauladhar and Pir Panjal, in Kangra and Chamba; the Ravi originates here.

Chamba

- **Ravi valley:** Chamba valley; the 'valley of milk and honey'; between the Pir Panjal (north) and Dhauladhar (south).

- **Pangi valley:** Along the Chenab adjoining Chamba; Lahaul to the east, Jammu-Kishtwar to the west; Sach pass near Sechu Nallah.
- **Churah valley:** Formed by the Siul; the most fertile area; Drati Pass here; Dalhousie, Khajjiar, Chamba and Bharmour ('Monkey valley').

Bilaspur

- **Chaunto valley:** Near the Bhakhra dam.
- **Danwin valley:** Between Bhadarpur and Bandla Hills (AIIMS here); also Jukhala valley.

Una

- **Swan valley:** On both sides of the Swan river; also Jaswan Dun valley; from Dhaulapur (NW) to Santokhgarh near Nangal; the Una HQ lies in its middle.

Glaciers

In the local dialect, glaciers are called '**Shigri**'. There are four major glacier concentration zones: (1) the **Bara Bhangal region** – at the meeting of the Kullu, Kangra, Chamba and Lahaul valleys – feeding the Ravi; (2) the **tri-junction of Kullu, Spiti and Kinnaur**, supplying tributaries of both the Beas and Satluj; (3) the **Lahaul, Spiti and Kullu valleys**, feeding the Beas system; and (4) the **Chandra Valley of Lahaul**, which hosts the Bara Shigri Glacier – the largest in the state (~3 km wide, ~25 km long) – feeding the Chenab.

- **Bara Shigri Glacier:** The largest glacier in Himachal (Chandra Valley). In 1936 it flooded the Chandra Valley, forming a lake (associated with Chandertal). First traversed by an all-women team in 1956, then Stephenson (1958) and Major Baljit Singh (1970); studied by the GSI in 1957 (G.N. Dutt and F. Ahmed).



Bara Shigri Glacier.

- **Bhadal Glacier:** On the south-western Pir Panjal slopes in the Bara Bhangal region of Kangra; source of the Bhadal River, a major tributary of the Ravi.



Bhadal Glacier.

- **Chandra Glacier:** On the main Himalayan slopes in Lahaul-Spiti; forms Chanderlal lake; originally separated from Bara Shigri; feeds the Chandra.



Chandra Glacier.

- **Bhaga Glacier:** On the main Himalayan range in Lahaul; the Bhaga river rises here – a principal headwater of the Chenab.



Bhaga Glacier.

- **Chandra Nahan Glacier:** On the south-eastern main Himalayan slopes north-west of Rohru; the primary source of the Pabbar (a Tons tributary, Yamuna system).



Chandra Nahan Glacier.

- **The Lady of Keylong Glacier:** At ~6,061 m, visible from Keylong (HQ of Lahaul); resembles a sleeping lady in snow; named over a century ago by Lady Elashainghday during the British Raj.

- **Gora Glacier:** On the south-facing main Himalayan slopes; shows clear recession from a negative mass balance – a sign of climate change.



Gora Glacier.

- **Mukkila Glacier:** In the Bhaga Valley at ~6,478 m; one of the highest glaciers in the state, part of the Lahaul high-altitude glacial system.



Mukkila Glacier.

- **Sonapani Glacier:** About 5.5 km from the Kulti Nala confluence; surveyed in 1906 (Walker and Pascoe) and 1957 (Kurion and Munshi, GSI); visible from Rohtang pass.



Sonapani Glacier.

- **Dudhon & Parbati Glacier:** Prominent Kullu glaciers, each ~15 km long; major feeders of the Parvati River (a Beas tributary); among the longest in the state.
- **Perad Glacier:** A small, accessible glacier near Putiruni ('broken rock'); noted for a naturally formed cave nearby.
- **Miyar Glacier:** In the Lahaul region, ~12 km long; the primary source of the Miyar River, in the north-west Lahaul Valley near the Indo-Tibetan border; in the Miyar 'Valley of Flowers of Lahaul'.



Miyar Glacier.

- **Beas Kund Glacier:** A glacial source of the Beas on the southern Pir Panjal slopes near Rohtang; this glacier-fed lake is the primary origin of the Beas.



Beas Kund Glacier.

1.7

Mountain Passes & Peaks

Notable Passes

- **Baralacha Pass (Baralacha La):** In Lahaul at ~4,890 m (16,040 ft) on the Manali–Leh highway, linking Lahaul with Ladakh; a meeting point for roads from Zaskar, Ladakh, Spiti and Lahaul. The Bhaga (a Chenab tributary) rises near it from the Surya Taal (Sun Lake); the 'Pass with cross roads on summit'.



Baralacha Pass.

- **Bhaba Pass (Bhawa / Tara):** In Kinnaur at ~4,865 m (15,970 ft); a crossover between the green Bhaba Valley (Kinnaur) and the barren Pin Valley (Spiti).



Bhaba Pass.

- **Darati Pass:** At 4,720 m in Chamba; a steep climb from Bhango via Alyas (4,300 m), descending over grassy and moraine slopes to Tandi (2,650 m).



Darati Pass.

- **Hamta Pass:** At ~4,270 m (14,010 ft) in eastern Kullu, reached beyond Manali via Indrasan, Deo Tibba and Inder Killa; the historic 'Arjun Gufa' cave lies at Bhanara (2,300 m) on the descent.



Hamta Pass.

- **Kunzum Pass (Kunzum La):** At 4,551 m (14,931 ft) on NH-505, linking Lahaul (via Gramphu/Keylong) with Spiti (via Losar/Kaza); 122 km from Manali and 79 km from Kaza, with 15 hairpin bends from Batal (4,000 m).



Kunzum Pass.

- **Manirang Pass:** Crossed via the Manessar Pass (3,949 m) above the Ropa–Chuktayanjan confluence, walking 12 km from Ropa (2,925 m) to Pankil (4,000 m) beyond Kalpa.



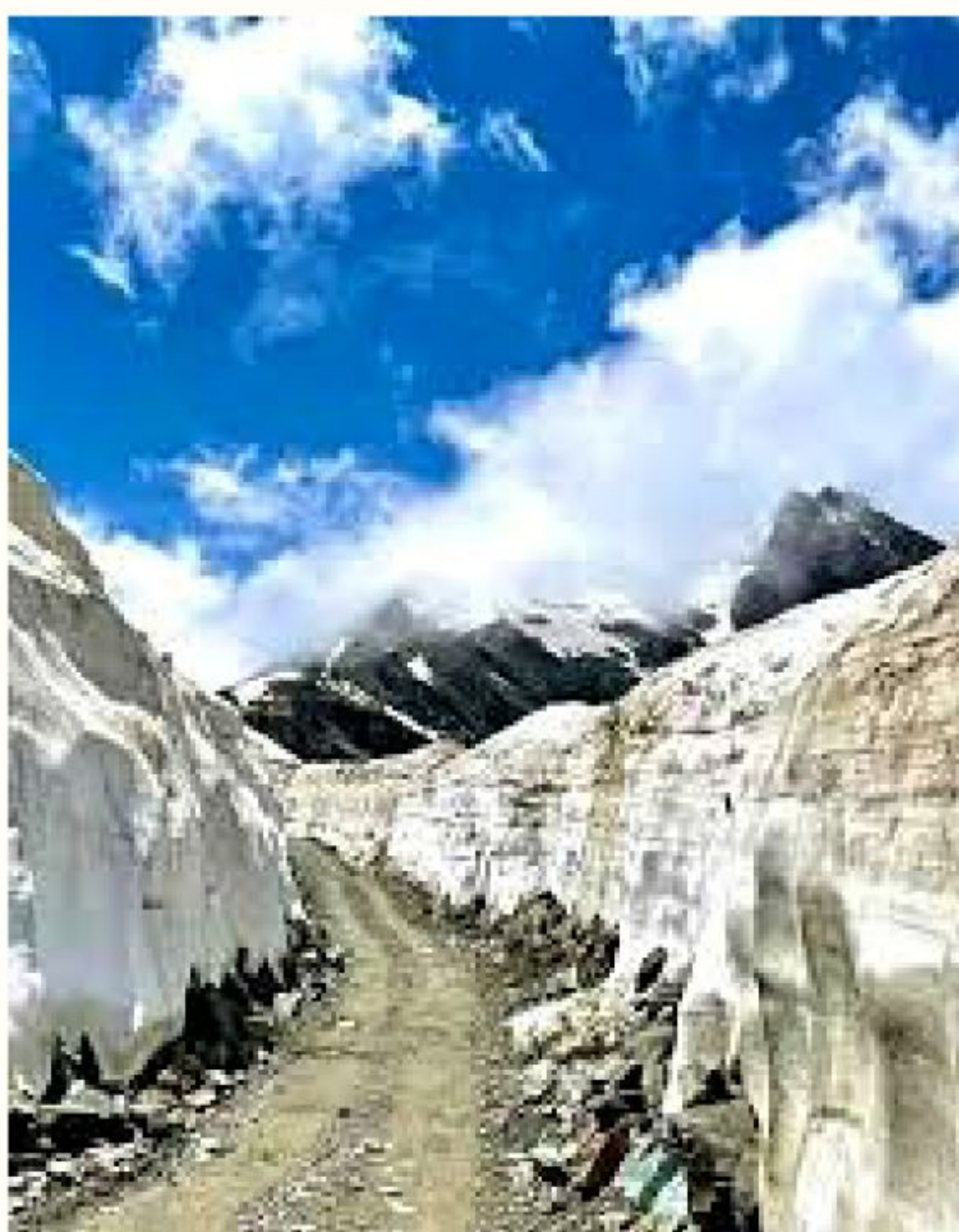
Manirang Pass.

- **Rohtang Pass:** The main gateway between Lahaul and southern Kullu-Manali, across the Pir Panjal on the National Highway to Leh – the world's second-highest road point. The first Englishman to reach it was Moorecraft, who called it 'Ritanka Jot'; Lord Elgin (1963) crossed it twice in a day.



Rohtang Pass.

- **Sach Pass:** At 4,395 m, the most convenient trekking route into the Pangi Valley in Chamba; Killar (with a helipad) is 137 km from Chamba via this pass.



Sach Pass.

Passes and Jots in Himachal Pradesh

Sr.	Name of the Pass / Jot	Altitude (m)	Location / Connects
1	Basodan	2,400	Chamba – Bhattiyat
2	Dulchi	2,788	Mandi – Kullu
3	Bhubu	2,895	Joginder Nagar – Kullu
4	Padri	3,050	Chamba – Jammu
5	Jalori	3,135	Inner & Outer Seraj, Kullu
6	Chauri	3,150	Chamba – Kangra
7	Rashol Jot	3,230	Kullu
8	Pajanand Galu	3,280	Mandi – Kullu
9	Khauri Galu	3,440	Kullu
10	Jalsu Ka Jot	3,450	Kangra – Chamba
11	Chandarkhani Galu	3,600	Kullu
12	Tainti Galu	3,600	Kullu
13	Baleni Jot	3,730	Kangra – Chamba

Sr.	Name of the Pass / Jot	Altitude (m)	Location / Connects
14	Gharhu Jot	3,730	Kullu
15	Sari Galu	3,740	Kullu – Kangra
16	Waru Pass	3,870	Kangra – Chamba
17	Shipki La	3,930	Kinnaur – Tibet/China
18	Rohtang	3,978	Kullu – Lahaul
19	Bheriyang Pass	4,140	Kullu – Kangra
20	Hamta Jot	4,270	Pir Panjal / Kullu – Spiti
21	Singoor Pass	4,310	Kangra – Bharmour
22	Indrahar Pass	4,320	Kangra – Bharmour
23	Tori Jot	4,360	Kangra – Chamba
24	Sach Pass	4,395	Chamba – Pangi
25	Ranjcha Pass	4,400	Lahaul – Spiti
26	Shipkila	4,500	Lahaul – Spiti
27	Kunzum La	4,520	Lahaul – Spiti
28	Shi Jot	4,530	Kullu
29	Rangchi Galu	4,540	Kullu
30	Tamsar Pass	4,572	Kangra – Bara Bhangal
31	Shinkla Pass	4,575	Kinnaur – Garhwal
32	Burua Pass	4,578	Kinnaur – Garhwal
33	Rupin Ghati Pass	4,625	Kinnaur – Garhwal
34	Talang Pass	4,640	Kangra – Chamba
35	Kathikukri Pass	4,640	Kullu – Kangra
36	Gairu Jot	4,660	Kangra
37	Drati Pass	4,720	Chamba – Pangi
38	Kalicho Pass	4,729	Lahaul – Bharmaur
39	Khidala Galu	4,750	Chamba
40	Nikora Pass	4,750	Kangra – Bharmour
41	Animal Pass	4,880	Kullu
42	Manali Pass	4,880	Kullu
43	Baralacha La	4,890–4,950	Lahaul – Leh/Ladakh
44	Tempo La	4,930	Lahaul – Spiti
45	Chabia Pass	4,934	Pangi – Lahaul – Bharmaur
46	Mulari Jot	4,960	Lahaul
47	Kugti Pass	4,961	Lahaul – Bharmaur
48	Shipting	4,980	Bharmaur – Lahaul
49	Taintu Ka Jot	5,000	Kullu – Kangra
50	Sara Umga Pass	5,010	Kullu – Spiti
51	Shakarof Pass	5,022	Lahaul – Spiti
52	Asha Gali	5,030	Kangra – Lahaul – Spiti
53	Nalgaon Pass	5,030	Kinnaur – Garhwal
54	Duggi Jot	5,060	Bharmaur – Lahaul
55	Kamilaga Pass	5,151	Kinnaur – Garhwal
56	Makori Jot	5,190	Kangra

Sr.	Name of the Pass / Jot	Altitude (m)	Location / Connects
57	Lamkhaga Pass	5,284	Kinnaur – Garhwal
58	Charang Pass	5,266	Kinnaur – Garhwal
59	Pin Parbati Pass	5,319	Kullu – Spiti
60	Borsa Pass	5,360	Kinnaur – Garhwal
61	Laluni Jot	5,440	Lahaul – Spiti
62	Chobu Pass	–	Bharmaur – Lahaul – Spiti
63	Bhim Ghasutri Jot	–	Kangra – Chamba

Peaks: Altitude and Location

Sr.	Name of the Peak	Altitude (m)	Location / Connects
1	Cholong	3,270	Dhauladhar Range (Kangra)
2	Shach	3,540	Kullu
3	Choordhar	3,647	Shimla
4	Narsing Tibba	3,647	Chamba
5	Hargaran	3,860	Lahaul-Spiti
6	Gauri Devi ka Tibba	4,030	Chamba
7	Patalsu	4,470	Kullu
8	Ghoralantinu	4,760	Kullu-Kangra
9	Pin Parbati	4,800	Kullu
10	Inder Kila	4,940	Kullu
11	Shrigla	4,999	Lahaul-Spiti
12	Murangla	5,060	Lahaul-Spiti
13	Lachalungla	5,060	Lahaul-Spiti
14	Thamsar	5,080	Chamba
15	Srikhanda	5,182	Kullu
16	Shitidhar	5,290	Kullu
17	Umasila	5,294	–
18	Raldang	5,499	Kinnaur
19	Parangla	5,579	–
20	Gushu	5,607	Kinnaur
21	Saltu Da Par	5,650	Lahaul-Spiti
22	Kailash	5,660	Bharmour (Chamba)
23	Pishu	5,672	Kinnaur
24	Bara Kanda	5,860	Bharmour (Chamba)
25	Hanuman Tibba	5,860	Kullu-Kangra
26	Maiwa Kandino	5,944	Kullu
27	Pir Panjal	5,972	Chamba
28	Solong	5,975	Kullu
29	Deo Tibba	6,001	Kullu
30	Gepang Goh	6,050	Lahaul-Spiti
31	Mukar Beh	6,070	Lahaul-Spiti
32	Shikar Beh	6,200	Lahaul-Spiti
33	Indrasan	6,220	Kullu-Manali

Sr.	Name of the Peak	Altitude (m)	Location / Connects
34	Shigrila	6,230	Lahaul-Spiti
35	Phawarang	6,349	Kinnaur
36	Gyephang	6,400	Lahaul-Spiti
37	Dibibokri Pyramid	6,400	Kullu
38	Jorkoden	6,473	Kinnaur
39	Kinner Kailash	6,500	Kinnaur
40	Mulkila	6,520	Lahaul-Spiti
41	Manerang	6,597	Spiti
42	Shipki	6,608	Kinnaur
43	Leo-Pargial (Riwo Phargyul)	6,791	Kinnaur
44	Shilla	7,025	Kinnaur (the highest)

All the best for your HPAS Exam 2026
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