Catalogue of the Passes of India

INDIA

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Editions des Cent Cols

CATALOGUE OF THE PASSES OF INDIA

1. This catalogue

This catalogue is an initial list of the known and named passes in India - just under 1,200.
There are undoubtedly many other passes used to cross from one valley to another, but we
have listed all those that appear in the sources available to us. The passes are naturally
concentrated in the most mountainous regions in the north - in the Himalayas - but the lower-
altitude massifs in the rest of the country also have a few natural crossings. We have tried to
shed some light on the accessibility of the passes known and promoted as being among the
highest "motorable roads".

2. History of India

Humans (homo sapiens) probably arrived in India around 55,000 years ago - the second oldest
inhabited region of our species after Africa. The oldest traces discovered date back around
30,000 years.

After the hunter-gatherer period, the development of agriculture enabled a more sedentary
lifestyle and the grouping of inhabitants into villages. As elsewhere, these structures tended to
consolidate into chiefdoms and then small monarchies. This organisation into regional states
persisted until the medieval period (c. 1200) and gave rise to the cultural and linguistic
diversity that still characterises the country. Buddhism established itself as the most
widespread religion.

From the tenth century onwards, the indigenous peoples of northern India regularly came into
conflict with Muslim warriors from Central Asia - first nomadic clans and then the Mughal
Empire. This empire nevertheless maintained a situation of relative peace - which encouraged
the development of trade and the arts.

From the early eighteenth century onwards, commercial opportunities attracted the interest of
European trading companies - especially the British East India Company. The company's
resources - military and administrative as much as purely commercial - enabled it to gain
control of most of the country by the 1820s. The organisation of the country into a more
modern state with all the necessary infrastructure began in 1848 - not without a few rebellions

by the Indian people. The rebellion of 1858 led to the dissolution of the Company and the establishment of direct administration of the country by the British government.

Despite India's participation in the two world wars alongside the Allies, increasingly strong calls for Indian self-determination arose in the 1920s and 1930s, structured around the non-violent movement led by Mahatma Gandhi.

India became independent in 1947 - not without a bloody partition of the subcontinent between Pakistan (mainly Muslim) and India (mainly non-Muslim).
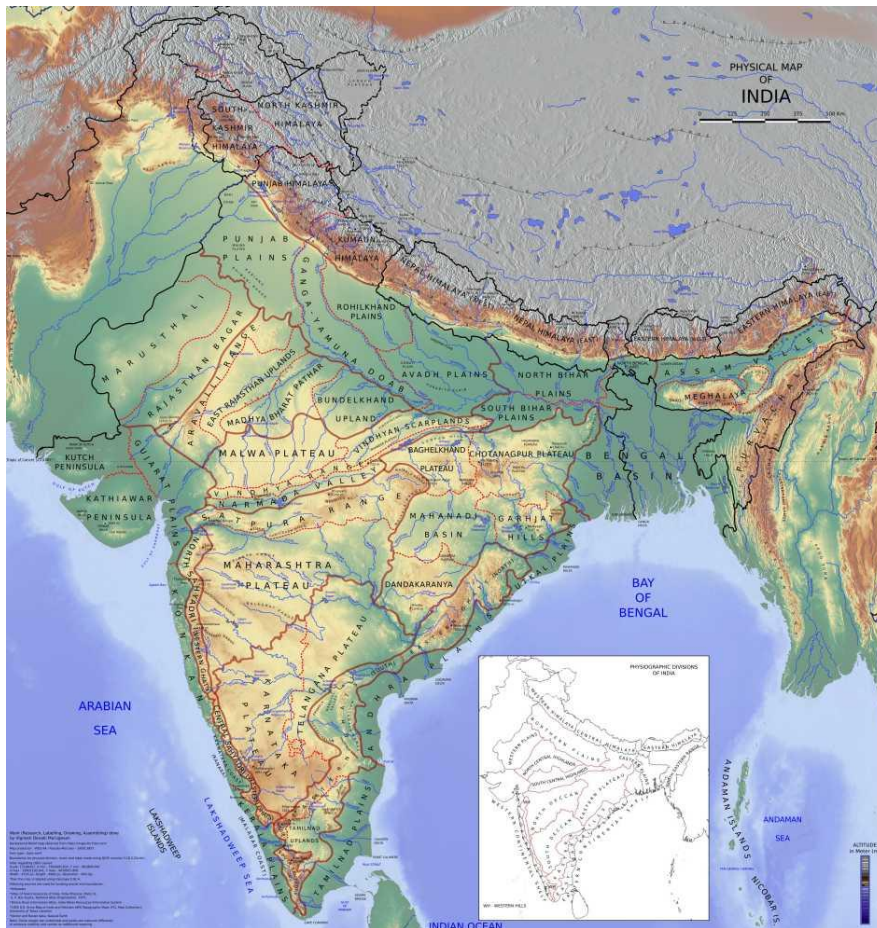
Since 1950 the country has been a federal parliamentary republic, with power shared between the central government and the states.

With a population of 1.3 billion, India is arguably the world's largest democracy. Even if a large part of the population remains in a state of poverty, the country has made great strides in the education of its people. The number of university graduates (100 million) exceeds the entire population of any country in Western Europe.

The federal capital is New Delhi. India considers itself to be "non-aligned" with the geopolitical blocs.

3. Geography Of India

In terms of surface area, India is the seventh largest country in the world - at 3.3 million km², it is six times the size of metropolitan France.
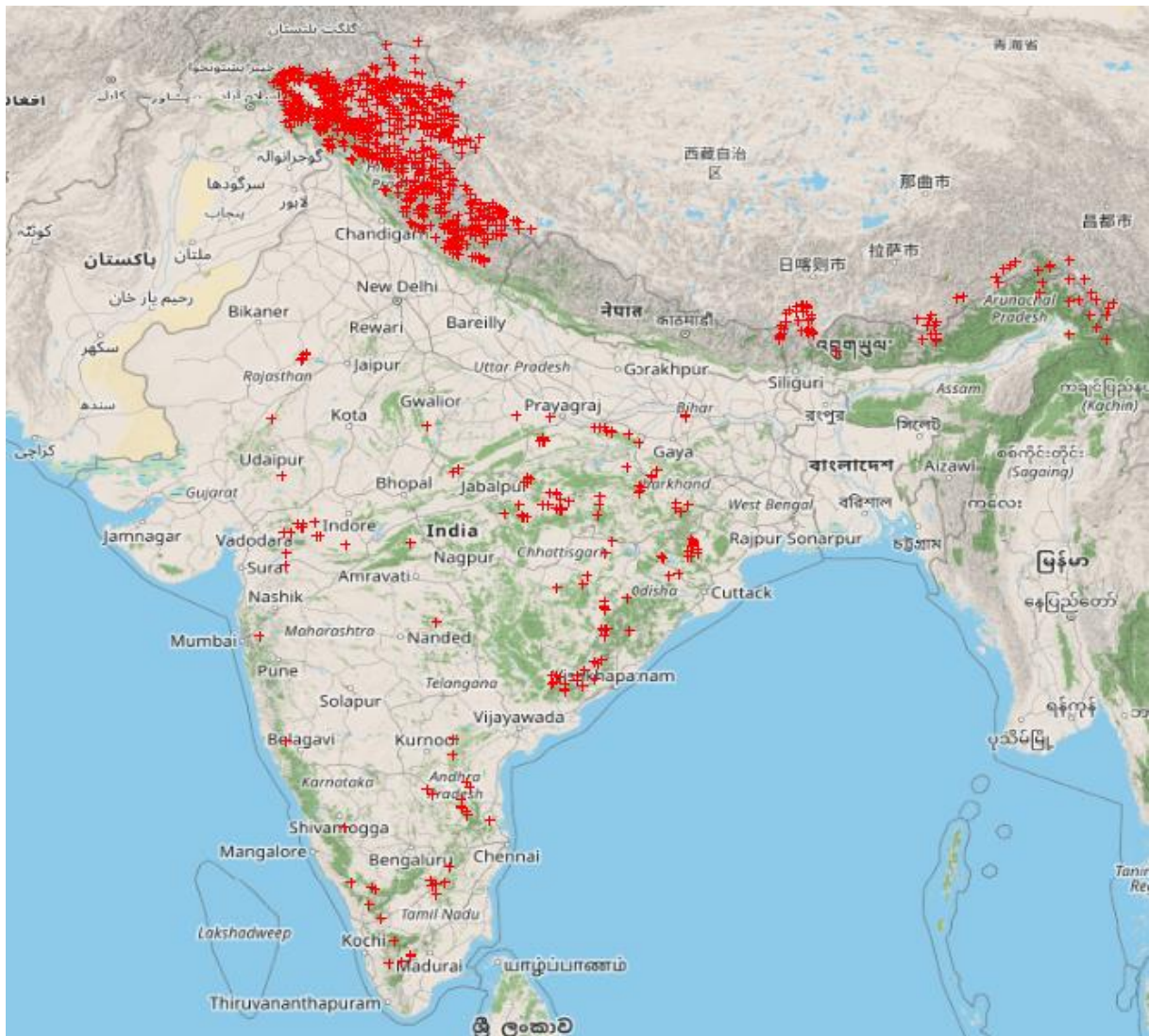
The country measures 3,700 km from north to south, stretching from 8° N to 37° N and from sea level to the summit of Kanchenjunga at 8,586 m. As a result, the climate varies enormously - from arctic in the high Himalayas to equatorial in the south.

India occupies most of the Indian subcontinent and is roughly divided into three distinct parts:

- The Himalayas in the north

- The Indus and Ganges plains in the centre and east

- The Deccan plateau in the south, interspersed with mountain ranges of moderate altitude.

The distribution of passes and the concentration in the Himalayas can be seen on this image.

The border areas with Pakistan in particular, but also with China, are highly contested, and as a result access to these areas and its passes is often restricted - especially for non-military personnel and foreigners who are not citizens or residents of the country.

There are several types of restriction:

- An "Inner Line Permit" required even by an Indian citizen - fairly easy to obtain but providing temporary access for a defined period only.

- A PAP ("Protected Area Permit") required by a non-citizen (in addition to the visa for India) - normally not too difficult to obtain for a foreign tourist, but which excludes access to certain "sensitive" areas

- A RAP ("Restricted Area Permit") - required for foreigners for part of Sikkim

- Special local permits where you have to apply to the local judiciary and military for special access for a given period - very difficult to obtain, even for an Indian citizen

Regions (with passes) affected by PAPs:

- Arunachal Pradesh (all)
- Himachal Pradesh (part)
- Ladakh (part)
- Rajasthan (part)
- Sikkim (part)
- Uttarakhand (part)

As a result, we can conclude that many of the "highest passes...." are effectively inaccessible to foreign tourists and often even to Indian civilians.

What's more, the altitudes quoted on the signs circulating on the Internet are often far-fetched.

The known prohibitions are indicated in the Excel file in the catalogue.

In conclusion, we can deduce that the only paved roads accessible above 5000m and the highest (perhaps) cycle paths that a tourist could access are the following:

Accessible paved passes		
Code	**Name**	**Altitude**
IN-LA-5335	Tanglang La	5335
IN-LA-5065	Lachalung La	5065

Two passes (IN-LA-5535 & IN-UT-5095) appear to have a paved surface on the Chinese side, but the access conditions are not known.

Acccessible cycleable (?) passes		
Code	**Name**	**Altitude**
IN-LA-5505	Photi La	5505
IN-LA-5405	Kangsang La	5405
IN-LA-5365a	Ane La	5365
IN-LA-5365	Saser Pass	5365
IN-LA-5345	Chang La	5345

Whether or not a bike is "cycleable" depends, of course, on the condition of the track surface and the physical fitness required to ride a bike at over 5000m. A bike powered by muscle power alone is not in the same league as a powerful 4WD.

There are doubts as to whether access to Photi La is permitted, so the current consensus is probably that Kangsang La is the highest accessible cycle pass in the country and Tanglang La the highest paved pass. Among the other well-known passes IN-LA-5585 (Marsimik La) and IN-LA-5355 (Khardung La) appear to be currently off-limits to non-citizens and IN-LA-5635a (Umling La) off-limits to civilians.

Administrative sub-divisions of India

ISO 3166-2 Code	Name	Status	Population 2011	Surface km²	Official Language	Other Official Languages
IN-AN	Andaman and Nicobar Islands	Territory	380,581	8,249	Hindi	English
IN-AP	Andhra Pradesh	State	49,506,799	160,205	Telugu	—
IN-AR	Arunachal Pradesh	State	1,383,727	83,743	English	—
IN-AS	Assam	State	31,205,576	78,550	Assamese	Bengali, Bodo
IN-BR	Bihar	State	104,099,452	94,163	Hindi	Urdu
IN-CH	Chandigarh	Territory	1,055,450	114	English	—
IN-CT	Chhattisgarh	State	25,545,198	135,194	Chhattisgarhi	Hindi, English
IN-DH	Dadra and Nagar Haveli and Daman and Diu	Territory	586,956	603	Gujarati, English	Hindi, Marathi
IN-DL	Delhi	Territory	16,787,941	1,490	Hindi, English	Punjabi, Urdu
IN-GA	Goa	State	1,458,545	3,702	Konkani	Marathi
IN-GJ	Gujarat	State	60,439,692	196,024	Gujarati	—
IN-HP	Himachal Pradesh	State	6,864,602	55,673	Hindi	Sanskrit
IN-HR	Haryana	State	25,351,462	44,212	Hindi	Punjabi
IN-JH	Jharkhand	State	32,988,134	74,677	Hindi	Angika, Bengali, Bhojpuri, Ho, Kharia, Khortha, Kurmali, Kurukh, Magahi, Maithili, Mundari, Nagpuri, Odia, Santali, Urdu
IN-JK	Jammu and Kashmir	Territory	12,258,433	42,241	Kashmiri, Dogri, Urdu, Hindi, English	
IN-KA	Karnataka	State	61,095,297	191,791	Kannada	—
IN-KL	Kerala	State	33,406,061	38,863	Malayalam	English
IN-LA	Ladakh	Territory	290,492	59,146	Hindi, English	
IN-LD	Lakshadweep	Territory	64,473	32	Malayalam, English	—
IN-MH	Maharashtra	State	112,374,333	307,713	Marathi	—
IN-ML	Meghalaya	State	2,966,889	22,720	English	Khasi
IN-MN	Manipur	State	2,855,794	22,347	Meitei	English
IN-MP	Madhya Pradesh	State	72,626,809	308,252	Hindi	—
IN-MZ	Mizoram	State	1,097,206	21,081	English, Hindi, Mizo	—
IN-NL	Nagaland	State	1,978,502	16,579	English	—
IN-OR	Odisha	State	41,974,218	155,820	Odia	—
IN-PB	Punjab	State	27,743,338	50,362	Punjabi	—

IN-PY	Puducherry	Territory	1,247,953	492	Tamil, English	French
IN-RJ	Rajasthan	State	68,548,437	342,269	Hindi	English
IN-SK	Sikkim	State	610,577	7,096	English, Nepali	Bhutia, Gurung, Lepcha, Limbu, Manggar, Mukhia, Newari, Rai, Sherpa, Tamang
IN-TG	Telangana	State	35,193,978	114,840	Telugu	Urdu
IN-TN	Tamil Nadu	State	72,147,030	130,058	Tamil	English
IN-TR	Tripura	State	3,673,917	10,492	Bengali, English, Kokborok	—
IN-UP	Uttar Pradesh	State	199,812,341	243,286	Hindi	Urdu
IN-UT	Uttarakhand	State	10,086,292	53,483	Hindi	Sanskrit
IN-WB	West Bengal	State	91,276,115	88,752	Bengali, Nepali	Hindi, Odia, Telugu, Punjabi, Santali, Urdu

The administrative division of states is essentially based on language and ethnicity rather than geography.
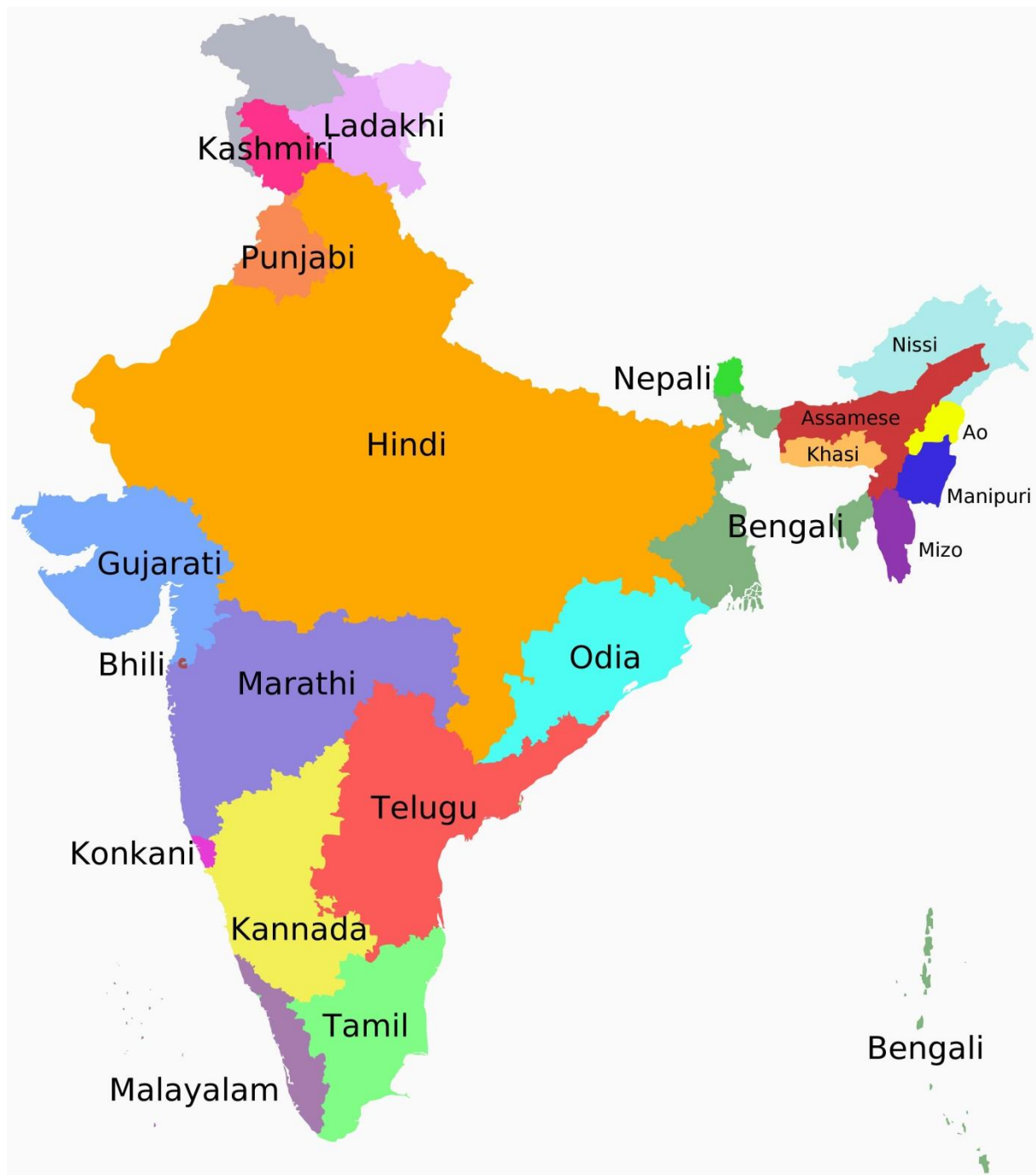
4. Languages in India

5. **Definition of a "col" (Pass)**

The Cent Cols Club Rules of the Game have been scrupulously respected in the preparation of this Catalogue:

"The passes listed in this Catalogue are those bearing this name, or any other local, regional or national equivalent, appearing (or having appeared) on cartographic or documentary sources deemed reliable by the Club. "(Rules of the Game)

"Because of the multitude of terrain configurations encountered, the minimum definition of the topographical character of a pass adopted by the Club is as follows: a privileged point of passage, imposed by the relief, situated on a watershed, and other than a summit."(Document appended to the Rules of the Game)

The descriptors and place names used in this catalogue reflect (as in other countries) the meaning of the different languages and their application in the field.

6. **Generic terms/descriptors accepted as designating a pass in India**

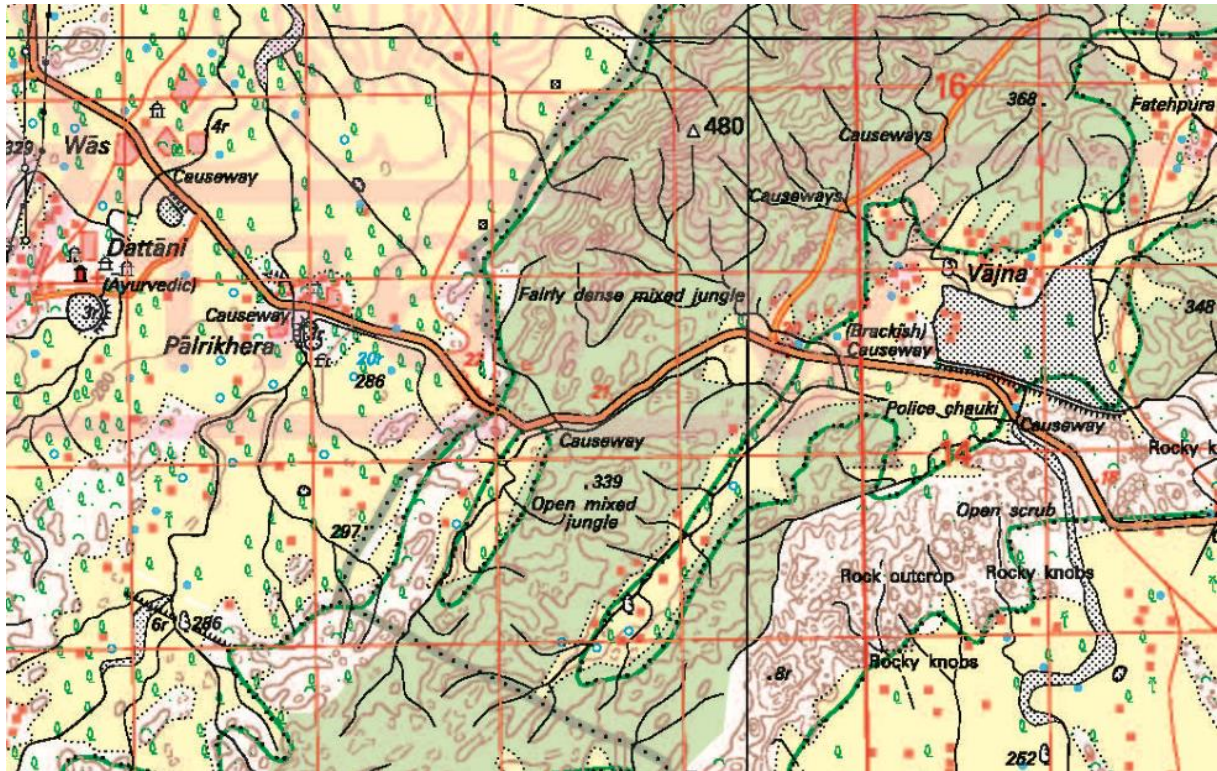| Local term	Language	Term (EN)	States	Meaning of the word (EN)	Literal meaning
	Kashmiri	Bal Bar	IN-JL	Pass	
	Hindi	Dakhru	IN-AR	Pass	
दर्रा	Hindi	Darra	IN	Pass	
	Kashmiri Hindi	Gali, Ghali	IN-JK IN-HP	Mountain Pass	
ಕಂಡಿ	Kannada	Gandi Gundi	IN-KA	Gap Depression	
	Hindi	Ghat Ghati	IN	Pass	Pass A flight of steps leading to water
	Hindi	Jot	IN-HP	Pass	
కణము	Telegu	Kanama	IN-TN	Gap Opening Breach Defile Pass	
ಕಣವೆ	Kannada	Kanave	IN-KA	Gap	Vale Gap
खनना	Tamil	Khana	IN-TN	Depression	
ལ	Ladakhi	La	IN-AR IN-LA IN-HP IN-SK IN-WB	Mountain Pass	
	English	Pass	IN	Pass	

The most common names for passes are "La" (Tibeto-Burman-Ladakh) in the Himalayas, followed by "Ghat" (Hindi) and "Pass" (English) throughout India.

7. **Sources used**

It is very difficult to obtain good detailed topographic maps of India. For a very long time, detailed maps were considered to be a matter of national defence and therefore not distributed at all outside the military.

With the proclamation of Prime Minister Modi in February 2021, India has declared its ambition to accelerate the development of geospatial tools and consequently to distribute detailed maps more widely. Maps at a scale of 1:50,000 can now be downloaded free of charge - but only by the country's citizens.

We were only able to obtain a few examples of these maps - mountainous and 'sensitive' areas are even more confidential. See a small extract below:

In the absence of the usual tools, we fell back on the following sources:
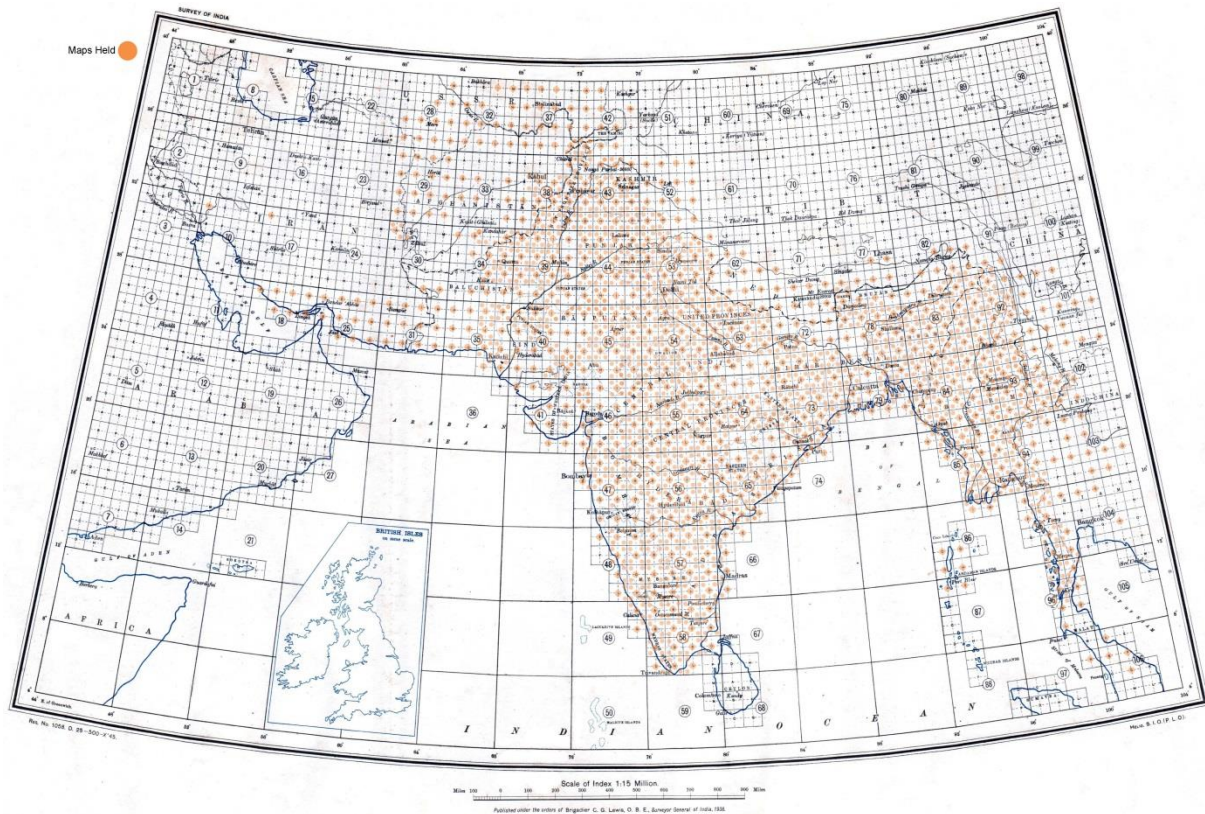
- The USBGN list of American military personnel

- Russian military maps

- Old British maps from the Survey of India

- Detailed maps for trekkers and mountaineers (Olizane, Leomann, Terra Quest).

All these sources have their drawbacks and contradictions, so whenever possible it was useful to cross-reference information.

The first organised mapping of the entire country (and neighbouring countries) was initiated by the East India Company in the early 19th century under the name of the Great Trigonometrical Survey project, using a half-ton theodolite. The work was completed in 1852 under the direction of Colonel Everest (who later gave his name to the highest mountain in the

world). The organisation responsible for continuing this work took the name of "Survey of India" and the national mapping body continued the same mission under the same name.

The whole country was mapped at scales of 1:126720 and 1:253440 and the 1925-1945 maps, which are fairly easy to obtain, are often the most detailed source in the public domain.

All the maps have not yet been studied in depth, so there may still be a few discoveries to be made.

Another very special source was also consulted. If you search for "Major Passes in India" on the Internet, you very often come across the same list of 50-60 passes, some of which are not really topographical passes and others of which are considered by most nations to be in Pakistan. In fact, this is part of the "General Geographical Knowledge" section tested during the Indian Administrative Service (IAS) civil service acceptance exams. Note that it's not just non-democratic countries that teach their version of history and geography!

However, there is no more official list, so in the absence of other sources this list has been retained as justification for two fine topographical passes.

Geographical Coordinate Systems

The coordinate reference system for the Survey of India also has a special history. The datum used by the British and then by the national mapping organisation uses the Everest Spheroid as its Reference Surface and Kalyanpur as its point of origin. The centre of this reference

surface is located approximately 1 km from the Earth's centre of gravity - which leads to some inaccuracies. In addition, as India is a country covering a large area, the territory has been divided into nine zones - each with its own parameters. These parameters are well known and disseminated outside India, but their communication is forbidden inside the country!!

To work with the old 'Survey of India' maps, we used 'Indian Mean Value', which is a sort of average of the nine zones - the result is accurate enough to locate place names on a more precise medium such as OpenTopoMap.

Everything was then converted to WGS84, so non-specialists don't have to worry about the localisation process.

8. **The altitudes**

Given the paucity of spot heights on local maps, apart from summits, we have often chosen to interpolate between SRTM1 10m contour lines.

9. **Catalogue User Manual**

Column Header	Description
Code	Country + Sub-Division + Initial Altitude of the Pass
Complete Name	The name exactly as it appears on the source document or the romanized version without diacritical marks
Alias	Some alternative names that have been recorded
Short name	The specific component of the name without the generic term
Chinese alias	There are a lot of passes bordering India and China, so we put the name in Chinese
Altitude	Altitude of the geographical pass in meters as it is marked on the most precise source. This altitude can be corrected in later editions of the catalogue but the altitude included in the pass' code will not change. Hence one should always refer to the column "Alti" for the correct altitude.
Documents	Link towards the Cent Cols visualiser which displays the pass on various interactive maps .
Access	Road grading in free format as well as the reference of the road/path.. R Track S Footpath HS Off-Trail. This information and the difficulty classifications are constantly updated by our members
Type	Type of road/path 0 = Road, 10 = Track, 15 = Path, 20 = Path unknown or inexistant
Diff.	Difficulty 0 = tarmac on at least one side 1 = rideable 2 = easy pushing of the bike 3 = difficult pushing of the bike 35 = road without grading 40 = bike needing to be carried 50 = acrobatic 99 = not graded but not necessarily impossible to cross
Neighbouring	Neighbouring Country or State (if any)
WGS84 Lon D	Longitude of the pass in the decimal format of the WGS84 system (directly usable in GPS devices, Google Earth etc).
WGS84 Lat D	Latitude of the pass in the decimal format of the WGS84 system (directly usable in GPS devices, Google Earth etc).
WGS84 Lon S	Longitude of the pass in the sexagesimal format of the WGS84 system.
WGS84 Lat S	Latitude of the pass in the sexagesimal format of the WGS84 system.
WGS84 zone	UTM zone according to the WGS84 system
WGS84 UTM x	UTM abscissa of the pass ("Easting") according to the WGS84 system
WGS84 UTM y	UTM ordinates of the pass("Northing") according to the WGS84 system..
Sources	Source map or signpost for at least one of the names of the passl
Remarks	Additional information considered to be useful
Follow-up	The year in which the pass was added or modified
Date of addition	Date for additions or modifications Rejected/Valid
Last Update	Date of the last update of the pass' data

10. Authors

Authors of the catalogue : The « Rest-of-the-World » Workgroup : Graham Cutting and

Ludger Vorberg. Please send any comments, suggestions, corrections or proposals for new passes or additional information to :

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Cover photo

« Zoji La »

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