



## A BRIEF ACCOUNT OF LOHAGHAT CATCHMENT OF SARDA SUB BASIN

Regulating Human and Resource Flow: Barrages, Canals and Chowkis



between 1.5 million and 7

India and Nepal, both neighbouring countries have an open border since 1950s which has allowed almost free movement of people to and fro in search of employment and availing services. The 2013 statistics reveal that India was home to 5.1 million migrants, around 11% were from Nepal (563050) and more than those migrated to India, there were more Indians in Nepal (810172 or about 9% of total migrants by destination). Overall 13,63,222 people moved across borders in the year 2013 between India and Nepal. The 2013 statistics somehow closely match with the narrative of 'India Migration Report 2015: Gender and Migration'. The authors of Chapter on Reducing vulnerabilities of 'women in migration' Cross-border migration experience within South Asia estimate that the number of long term and short term migrants from Nepal to India

*Map: Showing Parts of Mahakali & Seti Zones in Nepal, Parts of Uttarakhand's Kumaon Hills & terai of UP*

*Source: Imperial Gazetteer of India, v. 26, Atlas 1931 edition, Nepal and Part of Tibet, p. 45.*

million (National Centre of Competence in Research [NCCR] 2011, Bhattarai 2007) which hints at increasing growth of migration between both the countries. Scores of people from the Far Western Region (Mahakali zone in Nepal) migrate to Indian territory through transit points, the one such point being Gadda Chowki in Mahendranagar leading to Banbasa Town in Indian side. It's a routine, its 'local' and there are cordial cultural links, family relations across the border. The Far Western



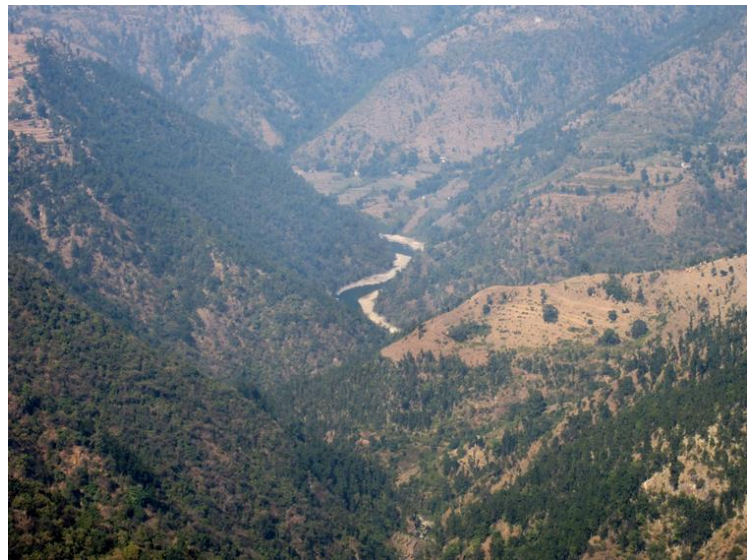
Region of Nepal being comparatively poorer than the rest of the country is one of the reason for migration. Its more or less a paperless movement apart from entering details on the immigration register and taking receipt / gate pass to travel on either side. People migrate on foot, tongas (horse cart), motorbikes on daily basis for short term and some for long term too.

### ***How Does the Imperial Gazettee Describe the Sarda or Kali Ganga***

Sarda – The name given to part of a river system flowing from the Himalayas through north-western Oudh. Two streams, the Kuthi Yankti and Kalapani, rising in the lofty Panch Chulhi mountains in the NE corner of Kumaun close to the Tibet frontier, unite after a few miles to form the Kali river or Kali Ganga, which divides Nepal from Kumaun. At a distance of 106 miles from its source, the Kali receives the Sarju or Ramganga (East) at Pancheshwar. The Sarju and its tributary, the Ramganga (East), rise in a lofty range leading south from the peak of Nanda Kot, and unite at Rameshwar, from which point the combined stream is called indifferently by either name. From the junction at Pancheshwar the name Kali is gradually lost and the river is known as Sarju or as Sarda. At Barmdeo the waters descend on the plains in a series of rapids, the course to this point being that of a mountain stream over a steep rocky bed. The Sarda now divides into several channels which reunite again after a few miles at Mundia Ghat (ferry) where last rapids occur, and the bed ceases to be composed of boulders and shingle. From this point the river forms the boundary between Nepal and Pilibhit District of the United Provinces for a short distance, and then cuts across and enters Kheri District. In Pilibhit it is joined on the right bank by the Chauka, which is now a river of the plains, rising in the tarai, but may have been originally formed as an old channel of the Sarda. The river is at first called both Sarda and Chauka in Kheri and its description is rendered difficult by the many changes which have taken place in its course.



Sarju Meeting Kali Near Pancheshwar



A Birds eye view of Eastern Ramganga

River Sharda or Kali makes for an international border between the two countries and its flow is regulated by the Tanakpur and Banbasa Barrage and one can witness distribution of water from wide network of canal system topping up the landscape to serve the largest populated state of Uttar Pradesh's 19 lakh hectares agriculture land. The Sharda Canal system of nearly a century old legacy is

functional with additions to its network over the time. The Indian Railways is transforming the meter gauge railway line from Pilibhit to Tanakpur via Banbasa (transit point), the Britishers' laid the railway line in 1910 to tap the forest wealth of Kumaon region.



A glimpse of Ladhiya River's wide river reaches, one can see aggregates being sorted and collected. Small make-shift hutments of workers on the river bed.

The slid materials on the hill edge can be seen which is flushed out by the local seasonal nallahs / streams originating in the immediate hills of outer Himalayas.

This is also a confluence point of Ladhiya and Korala River.

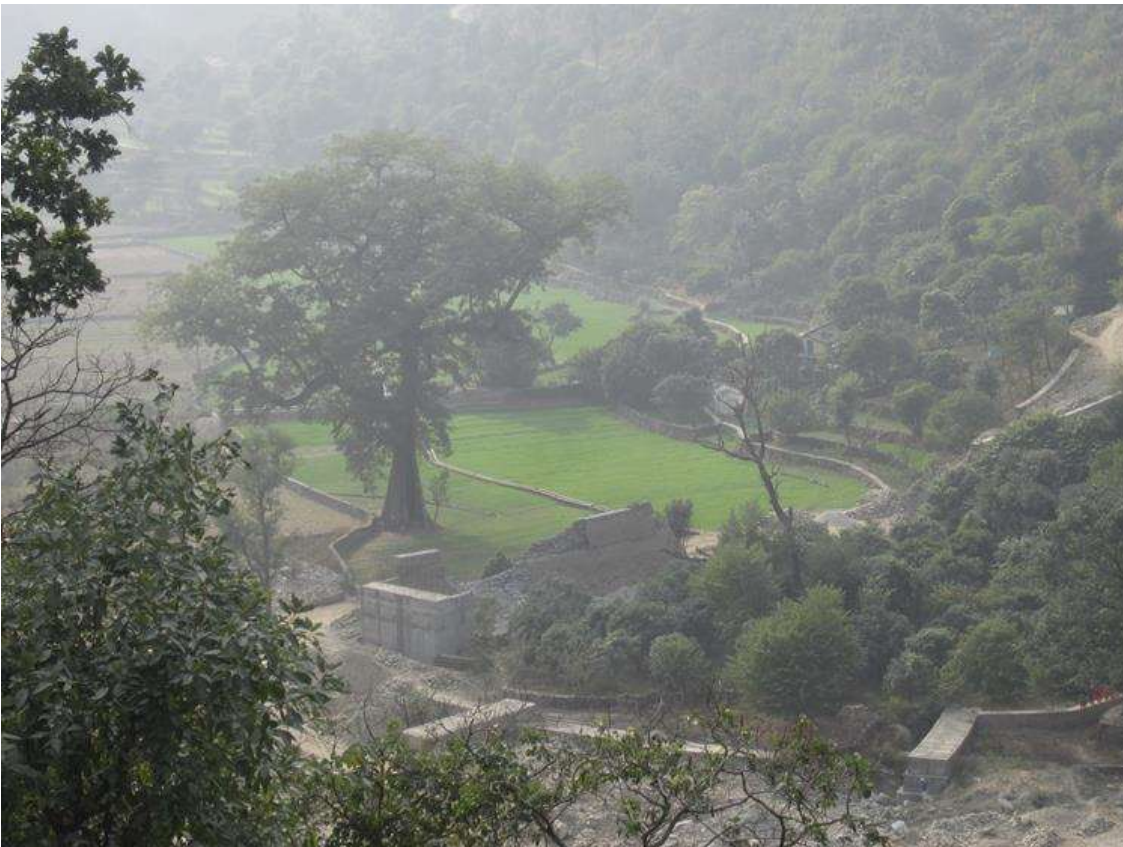


Ladhiya and Bandikhola Nallah bisecting the Jhalakudi Panchayat. This nallah causes havoc in the monsoons and several plots on its edge are at risk of losing land in high rainfall/flood

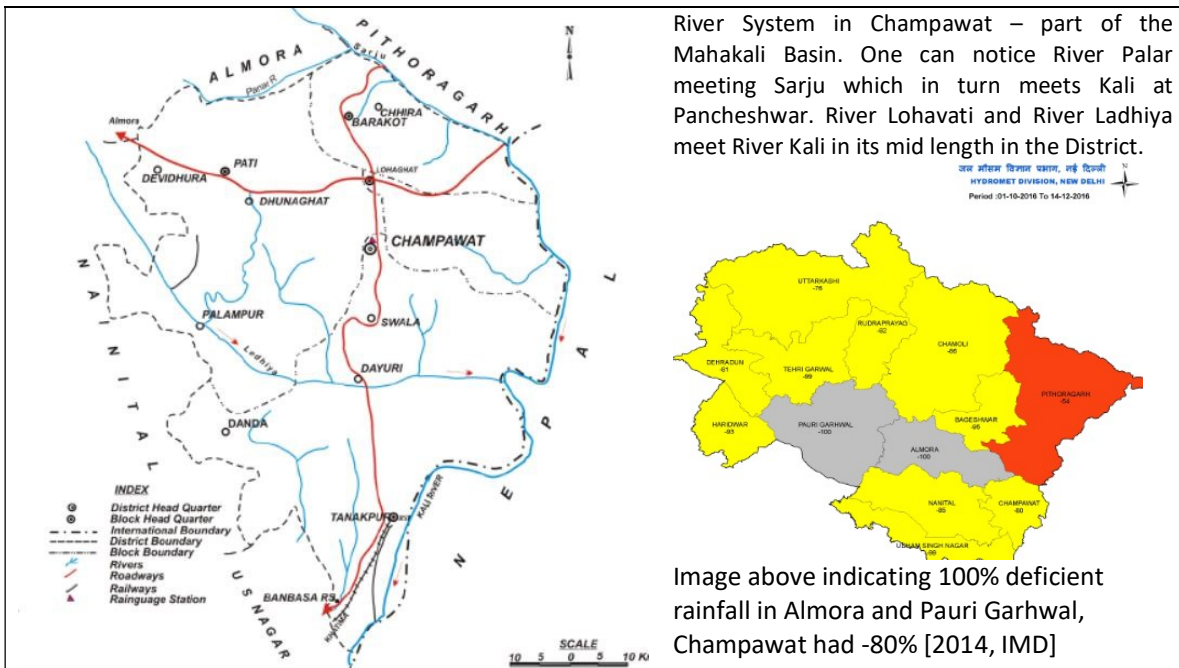




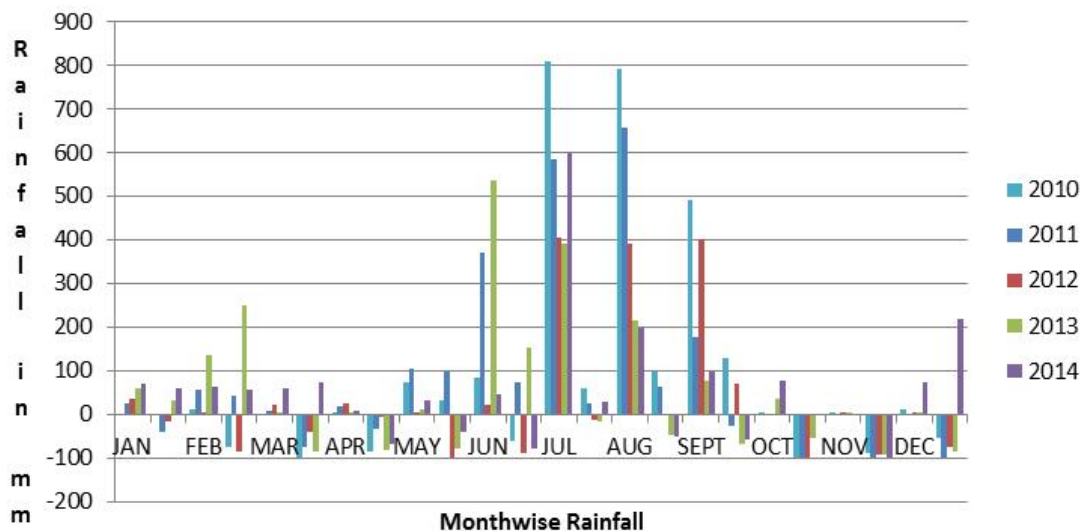
Korala River near Amodi, the blue downward arrows indicate traditional irrigation channels for conveying water to the fields which are shown in the photograph below.



A valley village on the banks of River Korala.



### Rainfall and Percentage Departure from Normals, Champawat (Uttarakhand)



As it is clear from the figure above Champawat receives maximum of its rainfall quota in the monsoon months of July through September. There is consistent deficient rainfall in the month of June over the last 5 years. Given that Champawat's 12.94% sown area is irrigated coupled with nearly non-existent winter rainfall over last several years, especially during the onset of winters in Oct-Nov. coinciding with rabi sowing is worrisome. This has worried the small farmers and many have to blame climate change for this. Uttarakhand like Himachal Pradesh is a hilly state with almost similar agro-climatic regions but horticulture thrives in Himachal – obviously with risks of climate change and extreme weather events which have increased over every passing year.



Tanakpur – Trading Centre in the Champawat tehsil of Almora District, United Provinces, situated in  $29^{\circ} 4' N$  and  $80^{\circ} 7' E$  at the foot of the Himalayas, near the Sarda river. A railway from Tanakpur to Pilibhit is under consideration. Population (1901), 692<sup>1</sup>. The village was founded in 1880, when the older mart of Barmdeo was washed away by floods. This is now one of the most important places at which the traders from Tibet meet the merchants of the plains. Borax and wool are brought down by the Bhotias, who carry back sugar and cloth. There is also a large trade with the hill tracts of Almora District and Nepal, from which turmeric, chillies, and ghi are exported, while sugar and salt are imported. Tanakpur is situated in the Bhabar; and the timber, catechu, hides, honey, and minor forest produce of that tract are collected here for sale. The trading season lasts only from November to May, and by the middle of June the place is deserted. The bazar contains a large and increasing number of stone houses and shops, while huts are erected annually by the smaller traders. Tanakpur is the winter headquarters of a sub-divisional officer.



The Sarda Ghat in Tanakpur on an evening with one channel containing water, flowing towards Tanakpur Barrage. (Photo in the direction of Tanakpur Barrage).

This is the widest river bed of River Sarda after it travels through the Himalayas to the Terai-Bhabbar zone.



<sup>1</sup> The Tanakpur Village in the Poornagiri sub district has a population of 3367 persons as per 2011 census and the Tanakpur Nagar Palika Parishad (Urban Local Body) has a population of 17,626 persons.







Kiroda Nallah meeting Sarda River upstream of Tanakpur Barrage

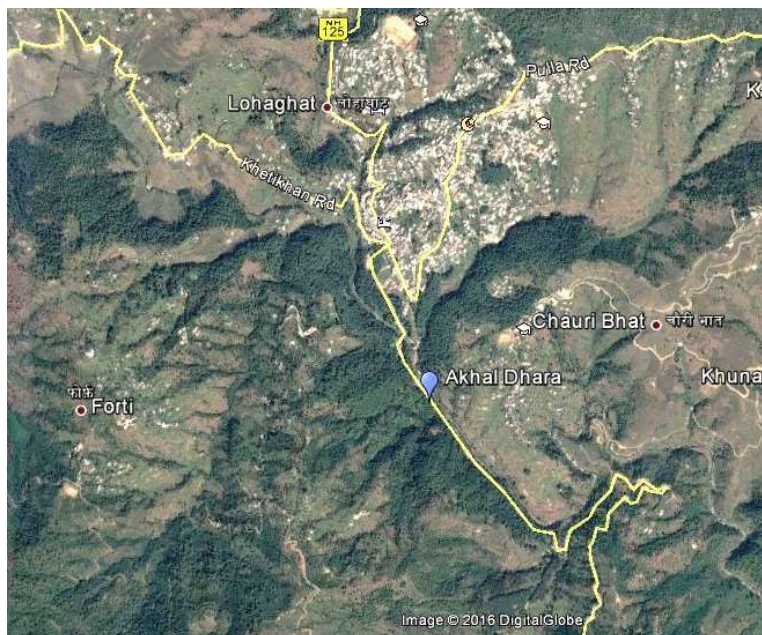


To the east of Trishul and Nanda Devi peaks is the snow clad range of Panch Chulhi visible from Champawat. The tributaries of Kali or Sarda flow in the valleys between the lower ranges of hills – the Dhauliganga and the Goriganga rising in glaciers, the Sarju and Eastern Ramganga just below the

snow line and the Gomati, Lahuvati and Ladhiya in the outer hills. The narratives of Gazetteer of India depict a long watershed which runs down the western border but in the south it is pierced by the Ramganga (West) [[Ramganga Sub Basin of Ganges River System](#)] and the Kosi, which are the principal rivers not forming affluents of the Kali.



Champawat as part of the lower Himalayas has extended longitudinal valleys (seen like a saddle in the picture above) with nearly dry step agricultural fields. Agriculture here is mostly rainfed with some irrigation potential in the valleys through guls' (gravity water channel). It is being stated that the rainfall pattern has tweaked over the last 3-4 years and has resulted in dry conditions, usually winter rains set the tone for soil moisture and conditioning. Till November, no rainfall was





received. Champawat has local streams and khads and one perennial spring is enroute Lohaghat called Akhal Dhara (continuous flow – see the blue balloon) and one can guess from its immediate protected / green catchment which makes it flow continuously.