People and Economy of the Hilly Region of Uttarkashi, Uttarakhand, India

Deepa Bhattacharjee

Assistant Professor & Head, Dept. of Geography, Maheshtala College (University of Calcutta)
Mail: *drdeepabhattacharyya[at]gmail.com*

Abstract: *Uttarkashi, a hill district in the state of Uttarakhand holds the grace of having the origin of rivers Ganga and Yamuna, the lifelines of India. Also known as the 'Devbhumi' (The land of gods and goddesses), Uttarkashi is the land of two famous Hindu pilgrimages namely 'Gangotri' and 'Yamunotri'. Here the nature expresses itself in breath-taking variations from charming valleys, natural lakes, fountains and beauteous landscapes luxuriously decked with vegetation punctuated by streams, brooks and rivers to high rise awesome rocky ridges and mountains with snow-capped peaks. All this makes the district an utmost attraction for the tourists, the pilgrims and for those having a zeal for adventures of trekking and mountaineering. Lying in the upper Himalayas, Uttarkashi contains within itself varying geographic environments ranging from snow free valleys and outer hills to the high peaks with perpetual snow and glaciers. The terrain runs into series of ridges and valleys. Each ridge leads to another coiling up in seemingly unending chains. Most of the terrain is mountainous consisting of high-rise ridges, hills and plateaus and flat pieces of land are rare. The land in these areas is now in fertility due to large content of out crops of boulders and gravels. Made-up of alluvial soil, valley is a streambed. Generally forests occur on the upper ridges that bound the valleys. On their sloping hillsides lie chains of sparsely populated settlements interspersed with terrace cultivation.*

Keywords: diverse social, cultural, agro-economic and environmental setup, population composition, economic characteristics

1. Introduction

The Himalayan region in India occupies approximately 591 thousand sq.kms. (18% of geographical area of India) and is inhabited by 6% of Indian population. This 'Abode of Gods' is also known as the weather maker as it regulates the climate of the entire Indian subcontinent (Anonymous, 1992). It constitutes a unique geographical and geological entity comprising a diverse social, cultural, agro-economic and environmental setup. In view of prevailing diverse conditions a single developmental approach cannot be uniformly applied to the entire region. Therefore, this region is still a challenge to the scientists, non-governmental organizations (NGOs), planners and administrators, and development policy makers and implementing agencies for sustainable development of the mountains. The present chapter is focused on the characteristics of people and economy of the area under study.

The economy of Garhwal in present times is sustained on the exploitation of non-timber forest produce (NTFP), agriculture and tourism. Livelihood strategies of the people in the region have undergone shifts over time as prior to British interests in the region, transit trade and subsistence agriculture was the pivotal economic activities of the people. The shift to tourism practiced today, in fact, is an outcome of policies of the British East India Company (EIC), the Crown and subsequently the Indian Government that resulted in (a) shifts in livelihood strategies of the people from transit trade and agriculture to forestry and (b) from forestry to tourism.
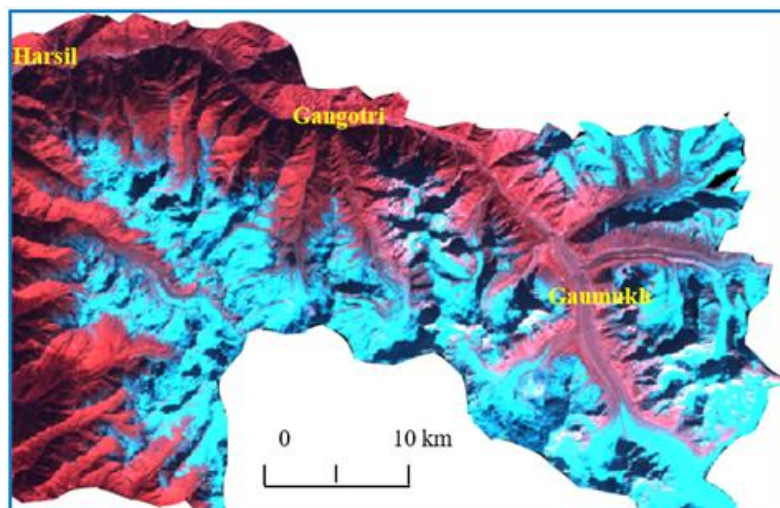
Figure 1: Satellite Image of the study area (Gangotri- Gaumukh), LISS III, 13th Nov, 2005

2. Materials and Methods

In order to fulfilment the objective of the research work this research worker has adopted modern methodology, procure the necessary data, information and evidences. Most of the observations in this study have been based upon intensive field work in the area under consideration. The study thus is based on available data and empirical observations. At first the study related maps were collected from different Govt. organization like topographical sheets (53 N/1, 53 J/13, etc.) from Survey of India, Dehradun and Kolkata, Satellite Imagery (LISS III and LISS IV) from National Remote Sensing Centre, Hyderabad and other maps from The Atlas of Uttaranchal by National Atlas and thematic mapping Organization (NATMO), Kolkata (Bhattacharjee, 2015).

Data collection usually takes place early on in an improvement project, and is often formalized through a data collection plan which often contains the following activity. Data and information were collected from various Govt. publications and records as for example population related data were collected from Census, meteorological data from Indian Meteorological Department, Pune, Sediment discharge data from IIT, Roorkee, village level land use data from Collectorate House, Uttarkashi and Hazard related maps from NRSC, Hyderabad etc.

Demographic Characteristics:
Human resource is considered as the prime importance in the development of an area be it an administrative unit like Tehsil, block or village or a physical unit like basin or watershed. The people, as the modifying agents of the landscape and creating and consuming agents of resources, occupy a significant place in the overall geographic personality of a region. The population characteristics have carved out the present landscape superimposed on natural landscape. In this

section various characteristics of demography of Uttarkashi – Gangotri area has been discussed. For the planning and development of an area, it is all the most necessary to study the population characteristics of that area for whom the development to be made.

The study area is characterized by a diverse population composition in respect of ethnicity, religion and language having varied socio-cultural practices. Due weightage has been given on the aspects of (i) population growth, (ii) population distribution and density, (iii) age-sex composition, (iv) rural-urban composition, (v) social composition e.g. literacy patterns, occupational patterns etc., (vi) settlement pattern etc.

Population Density and Distribution
Population density is a very simple concept of relating population size to the land area with a view to assessing crudely the population pressure upon the resources of the area. It is the most important indices of population concentration and is generally expressed in terms of persons per sq.km of land area. The area under study is thinly and unevenly populated with an overall density of 41 persons per sq. km (Census 2011). The population density was 37 persons per sq. km (Census 2001). The total population of the Bhatwari Block is 69815 out of which the male and female population is 38043 and 31772 respectively (Census, 2001) with 208 persons per sq. km population density (Census 2001).The distribution of population in the area under study is markedly influenced by physical characteristics such as terrain, climate, availability of water and transport facilities. Locationally the valleys, gentle and sunny slopes provide the best side for settlements. The Southern part has the highest density of population and it decreases towards north eastern part of the region. The total number of

Table 1: Demographic Indicators of Uttarkashi District, 2001

Total Population	295013	No. of Literates	161161	Total worker	135904
Urban Population	22918	No. of Illiterates	133852	Male worker	73398
Rural Population	272095	Literacy Rate	65.7	Female worker	62506
Population Density	37	Male Literacy Rate	83.6	Total Non worker	159109
Male	152016	Female Literacy Rate	46.7	Male Non worker	78618
Female	142997	Male Literates	105663	Female Non worker	80491
Sex Ratio	941	Female Literates	55498	Cultivators	101607
SC Population	67467	Male Illiterates	46353	Agricultural Labours	2705
ST Population	2685	Female Illiterates	87499	Workers in Household Industries	2075
No. of Household	55558	Gender Gap	36.9	Others	29517
				Sources: Census of India, 2001.	

house hold of the Bhatwari Block is 14456 and the house hold size is 4.8, where as the house hold size of Uttarkashi is 5.3. The population of Uttarkashi District as per 2001 census is 295013 of which 152016 are males and 142997 are females and this accounts for 3.47% of the total population of Uttaranchal. The total population of the Uttarkashi District is 329686 out of which the male and female population is 168335 and 161351 respectively (Census, 2011).

Growth Rate of Population:
Population growth plays a significant role in the demographic dynamism of an area and it has been assuming a greater connotation in population studies of the area under study. Population of Uttarkashi – Gangotri area has been constantly increased since 1981. The state has registered an increase of 19.20 per cent in population during the decade 1991-2011. Significantly the growth rate of female population is higher as compared to male population. Uttaranchal ranks 20th in India

by its population size (2001) and have an annual growth rate of 1.92 percent (Table1& 2). The density of population per square km has increased from 133 (1991) to 189 (2011). In population figures thus Uttaranchal has compared well with many other states of North India and has been below the national average. Bhatwari's total population of 69815 in 2001 constitutes 23.66 % of Uttarkashi's total population. Uttarakhand is one of the twenty six states where the population growth has declined by 5.03% points between 1991 and 2001. According to census 2011, the percentage of population growth is 22.72 for Uttarkashi and 19.20 for Uttarakhand. The Crude Birth Rate of Uttarkashi is 32.8 and Infant Mortality Rate is 98.

Population projection is a scientific attempt to peep into the future population scenario, conditioned by making certain assumptions, using data relating to the past available at that point of time. Assumptions used and their probability of adhering in future, forms a critical input in this mathematical effort. Predicting the future course of human fertility and mortality is not easy, especially when looking beyond much further in time. Medical and health intervention strategies, food production and its equitable availability, climatic variability, socio-cultural setting, politico-economic conditions and a host of other factors influence population dynamics, making it a somewhat unpredictable exercise. Therefore, much caution must be exercised when either making or using the population projections and the context of various conditions imposed, should not be lost sight of on the basis of past behavior and the likely future scenario assumed. The researcher has made an attempt to calculate the village and town level projected population and growth rate of the area under study. The population projection has been calculated mathematically for the Uttarkashi-Gangotri area to find out the changes at forward dates which rates on the following assumptions. By assuming that this rate of growth would continue in the future, population figures can be obtained in any given year. Thus, in this method, the net increment between two years is obtained by applying 'r' to the base year population which means the increment remains constant irrespective of the year, and, hence, considered as a crude method of projection. A slightly improved method is the *compound rate of growth method,* which can be computed with the help of the following formula.

$$R = [(P_n / P_o)^{1/n} - 1] \times 100$$

Where,

r = annual rate of growth

P_n = population in the current year

P_o = population in the base year

n = number of intermediary years.

By the formula

$$P_n = P_o (1+R/100)^n$$

population in any requisite year can be projected. The value of the expression can be obtained with the help of a scientific calculator by using the function. However the growth rate of

Bagori and Mukhwa village is showing a downward trend from 2011 onward.

Sex Ratio

Sex Ratio is a important aspect of the population composition and it signifies the number of females per thousands males. Sex ratio may vary among the different places of Uttarkashi-Gangotri area . The male female ratio of population in the area under study is 835 to 1000 males, as against 941 (2001 Census) and 959 (2011 Census) for the Uttarkashi district as a whole.It has increased from 941 to 959 during last decade. It has also improved from the previous 1991 figure of 918 (Uttarkashi) women per thousand males. According to census 2001, the sex ratio of Uttarkashi (MB) town is 750 and the sex ratio of Gangotri (NP) is only 47.Low agricultural productivity, a low level of industrial development, harsh geographical conditions and nature of terrain has led to a high male migration from the region. However a disturbing picture emerges in case of child sex ratio (0-6 age group). It is not only very low at 903 (2001 Census) but has declined sharply from 948 in 1991. The child sex ratio (0-6 age group) of Uttarkashi (MB) town is 790. Migration alone cannot explain this phenomenon. A higher female child mortality rate and female foeticide could also be playing significant role in this.

Scheduled-Caste - Scheduled Tribe Population and Religion:

Uttarakhand has an appreciable proportion of Scheduled Caste population, (17.48%) besides representatives of major religions like Hindus, Muslims, Sikhs, Christians and Buddhists. The total population of the Bhatwari Block is 69815 out of which the SC and ST population is 8343 and 1111 respectively (Census, 2011). Maximum number of SC and ST population live in the rural areas. Scheduled castes (SCs) alone are 11.95 per cent of the total population while scheduled tribes (STs) are little over 1.59 per cent. The number of Scheduled Caste and Scheduled tribe population of the rural areas are 5961 and 894 and for the urban areas are 2382 and 217 respectively. Maximum numbers of Scheduled Caste population live in the Tiloth village (361) constitute 11.85% of the total population and Scheduled tribe population is concentrated in the Bagori villages (502) (Plate.10.1) which constitute 87.60% of the total population of the village . It has a tribal population of 3.10 percent, (1991) who belong to major tribes like Bhotias, Buksa, Jaunsari, Raji, Van Rawat. The most common language spoken in the area under study is Garhwali language, which belongs to the group of Indo-Aryan languages and is a form of Hindi language.

Literacy:

Table 2: Religion Characteristics of Uttarkashi-Gangotri area, 1991-2011

Area	Total Population	Hindus	Muslims	Christians	Sikhs	Buddhists	Jains	Other Religion	not stated
Uttarkashi District (1991)	239709	235550	2,164	89	241	1,377	284	2	2
Uttarkashi District (2001)	295013	290201	2817	230	284	1239	157	8	77
Bhatwari 2001(Block)	69815	67927	1276	174	136	277	6	1	18
Uttarkashi 2011(MB)	16218	15290	843	15	64	6	0	0	0
Gangotri 2011 (NP)	605	601	2	1	1	0	0	0	0
									Source: Census of India (2011)

Literacy rate is a vital parameter to gauge the socio-economic transformation of the population. The process of education in terms of improved qualification and skills would help in the formation of human capital stock which has an overwhelming influence on the socio-economic development of a region as it determines the rate and pattern of resource utilization. The census of 2021 recorded 75.98% literacy rate in the Uttarkashi district . The census of 2001 recorded 66.06% literacy rate in the overall Uttarkashi-Gangotri area and 77.21% literacy rate in the Uttarkashi town area. The percentage of literacy has increased from 68.74% in 1991 to 75.98% in 2011. The growth rate in literacy rate is 19.35 from 1991 to 2001. The literacy is well above from the national average of 74%. Male literacy (90.4%) is much higher than the female literacy (61.2%) and the gender gap in literacy is 29.1 and 13.2 in Bhatwari block and Uttarkashi town area respectively. Village wise distribution of literacy reveals that Bhangeli records the lowest literacy (44.6%) whereas Barahat range (90.8%) has the highest literacy (90.8%) both for males as well as females.

Table 3: Literacy Rate and Gender Gap of Bhatwari Block, 2021

Block	Area	Literacy Rate			Gender Gap in Literacy
		Total Literacy Rate	Male	Female	
Bhatwari	Total	77.2	90.4	61.2	29.1
	Rural	73.8	89.5	55.8	33.7
	Urban	87.3	92.7	79.5	13.2
Source: Statistical Report of Uttarkashi (2021)					

Economic Characteristics

Major portion of Uttarkashi is covered with forests and thus, forestry and forest products play a great role in supporting the economy of the district. Agriculture and other sectors like animal husbandry, sheep rearing, and several cottage industries form the base of economy of Uttarkashi District. Main cottage industries of the district are Carpets, blankets, basket-making, mat weaving and wood craft. Tourism industry is another important sector of the economy of Uttarkashi District. Agriculture, forest products, animal husbandry, sheep rearing and cottage industries are the main sources of economy of Uttarkashi District. In these areas agricultural production suffers from many constraints. The availability of cultivable land itself is the greatest restricting factor on the development of agriculture. It can be seen from the fact that as much as 88 percent of the area is either covered by forests or is barren and uncultivable. The land is low in fertility except in the valleys and even land is too few and far between. Shorter agricultural season, low temperature, high altitude, smallness of land holding, perpetual problem of soil erosion due to steep gradients etc. are other inhibiting factors affecting agriculture. The agriculture, therefore, does not offer too much hope for bringing about well being to the people of the area. Sheep rearing for production of wool and meat, orchard raising, spinning and weaving of wool and other cottage industries etc. offer much scope to the people. Cultivation in these areas is carried on largely by making terraces on the sloping hillsides. Some cultivation is done on steep hills also where terracing and tilling cannot be done and the place is cleared by burning scrubs and bushes. The seeds are sown with the help of a hoe. Both Rabi and Kharif crops are harvested. The main Kharif crops are paddy, small millets and potato and Rabi crops are wheat and barley. These crops account for over 80 percent of the total cropped area. Horticulture is another field that supports the economy of Uttarkashi District.

However, it has not made much headway due to difficulties in marketing the produce, due to poor communications and remoteness of areas. Animal husbandry is an important source of supplementing income of the rural population of Uttarkashi District. Sheep rearing is an important industry in the district. Yet it does not provide full time employment. The main work forces of about 75% are engaged in primary and secondary sectors and balance in allied sectors. As regards land use pattern about 70% of land is under forest and barren lands. About 64% of the inhabited villages are connected with road and the remaining villages suffer because of remoteness and higher altitudes. As regard rural electrification Uttaranchal has 76.1% electrified villages and the per capita consumption of electricity of the state is about 245.6 Kwh. However, Dehradun and Nainital have much higher consumption where as Uttarkashi has the least of 43.7 kwh consumption.

3. Conclusion

Tourism development in mountain and remote areas also accelerated ecological problems, like garbage trails, deforestation, disturbed flora and fauna life systems, over-crowding, congestion, landslides etc. Garhwal Himalaya specially the upper region of Bhagirathi like Chirbasa, Bhojbasa, etc are facing utter deforestation, poaching and landslides. This is one side of the coin, the other side says that tourism advocates conservation desperately (Bisht, 1994). The economic activities of Uttarkashi-Gangotri region are being diversified for tourism. The income of the local people and standard of living is improving due to positive effects of

tourism. But deprived of nature there will be no tourism, so tourism weights nature conservation and tourism are essential and over all environmental consciousness of local people and tourists is so much required to preserve the aesthetic beauty of the area.

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Author Profile

Dr. Deepa Bhattacharyya is an Asst. Professor & Head, Dept of Geography, Maheshtala college. She completed her M.Sc. In Geography in 2006 from University Of Calcutta with special paper of advanced Geomorphology. She has done her PhD on "Landform Characteristics of Gangotri Glacier, Uttarakhand" in 2013 from University of Calcutta. She has done PG Diploma in Remote Sensing & GIS from Jadavpur university & IIRS, Dehradun. She has done Certificate course on GIS & GPS from Dept. Of Space, ISRO, Hyderabad. DR. Bhattacharyya published 22 Research papers in National and International journal. She was associated in teaching at Dept of Geography, Fakir Chand College (CU) for 10 years. She is Hony. Asst. Secretary of the Institute of Landscape Ecology and Ekistics, kolkata and also life fellow of Indian Society of Remote Sensing (ISRS), Indian National Cartographic Association (INCA), Geographical Society of India, Indian Institute of Geomorphology, Himalayan SamikhaParisad etc. Her area of interest is on Glacial Geomorphology, Advanced Geomorphology, Remote Sensing & GIS, Cartography etc.

Research Projects completed: Minor Research project Funded by UGC. Govt. of India (2012)

Research Projects Ongoing: Major Research project Funded by ICSSR. Govt. of India (2022)