



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## A STUDY ON LAND USE, TRADE AND TRANSPORT PATTERN OF HARIDWAR DISTRICT

*Manju Devi & Prof R. S. Panwar*

*Dept. of Geography, School of Earth Sciences*

*HNB Garhwal University (A Central University) - 246174*

**ABSTRACT-** Culture is a word for individuals' lifestyle, which means the way people do things. There are different groups of people who have different cultures. Men do different types of cultural activities using land as agriculture, settlements, trade & transport and commercial use etc. These activities differ from place to place and nation to nation. Its development depends on the historical procedure functioning in a local, regional or national context. Haridwar district is culturally rich region. It lies in the foothills of Siwalik hills. In this paper an attempt has been made to know the pattern of some cultural activities like land use & land cover and trade and transport. For this secondary data has been collected from different sources then to reach the final result, the data has been analyzed using SPSS.

**KEYWORDS-** Culture, Agriculture, Land use, Trade and Transport.

### INTRODUCTION

Culture is passed on to the next generation by learning, while hereditary qualities are passed on by heredity. Culture is found in individuals' composition, religion, music, clothes, cooking and what they do. (<https://simple.wikipedia.org/wiki/Culture>). Culture differed from place to place and nation to nation. Its development depends on the historical procedure functioning in a local, regional or national context. For example, we vary in our way of greeting others, our attire, food, habits, social and religious traditions and practices from the west. As the general population of any nation is described by their particular cultural traditions. All type of cultural activities is interrelated with land. The land is a precious bountiful natural resource available for human use. It, therefore, establishes an important element in planning and management for its optimal as well as effective use. Its study carries great importance because it can provide a picture of the extensively used, under-used and unused lands of the country. The term land use is virtually self-explanatory meaning the actual specific use to which the land

surface is devoted to in terms of inherent primary land use, i.e., land under forest, pasture, cultivation, settlement, etc. Sometimes, a complication arises over the usage and meaning of 'use' and the alternative word 'utilization'. Land utilization is the process of exploiting land use i.e. the different categories of utilization under the different purpose of a specific use. For example, agriculture land may be put to the use of different crops of the different agricultural system, like intensive farming, commercial farming, dairy farming etc. However, the term land use is, adopted to avoid this complication (**Ram 2002**).

The land is irreplaceable and not reproducible. It is finite, but the population dependent on it and their needs and desire are not limited. They have been increasing over time. Per capita availability of the resources, therefore, has been declining in the country as a whole. The per capita land availability for agriculture has been reduced from 0.40 hectare to 0.14 hectare by the turn of this century and is likely to touch the limit of 0.10 hectare by 2025 in the country (**Kanwar 2000**). Although, agricultural land use change is brought about for the general improvement in agricultural productivity and consequent increase in economic prosperity and standard of living. Land use change from one farming system to another may affect the sustainability of the eco-system and its resilience, in particular, the carrying capacity of the soil resources, and may lead to soil degradation, erosion, acidification, salinization, leaching, nutrient loss, etc. The meaning of land use sometimes restricts to various use of land, but in its use, we find overuse, under use, and misuse, which assists us to make planning in order to attain optimum utilization of land (**Lalljee 2006**).

## STUDY AREA

Uttarakhand is situated in the northern portion of India. Haridwar is one of the districts in the territory of Uttarakhand, India. Haridwar district is surrounded by Saharanpur in the west, Dehradun in the north and Pauri Garhwal in the east, Muzaffarnagar and Bijnor districts in the south. The district Haridwar is covering an area of 2360 km<sup>2</sup>. The latitudinal and longitudinal extent of the district is 29.58<sup>0</sup> north and 78.13<sup>0</sup> east separately. The district is situated on 249.7 meters height from the msl. (**Govt. of India msme report 2007**). Haridwar, the gateway to Gods, is situated on the bank of river Ganga, has been a revered center for pilgrimage and mentioned in the Puranas as Mayapuri. The existence of Haridwar can be traced back to 2000 B.C. Remains of saffron-colored earthen pots belonging to the last stages of Indus Valley civilization have been found in the district. (**Statistical Diary of Haridwar 2016**). Haridwar has developed as a major commercial hub because of its astounding street network with the neighboring states. The major tourist centers of Haridwar are well connected by trains to almost all other parts of India. The closest airport is the Jolly Grant in Dehradun (58.2 km). There are 8 million pilgrims visit in Haridwar every year (**Nikhil Monga, et. al. 2016**).

## OBJECTIVES

1. To analyze the land use and land cover pattern in Haridwar District.
2. To evaluate the trade & transport pattern of Haridwar district.

## METHODOLOGY

The nature of the study is qualitative as well as quantitative. The secondary data has been used in this present study. The data has been collected from various sources like govt. agencies, statistical diary of study area, scholarly articles and websites etc. Further, the data were systematically arranged, tabulated and analyzed.

## RESULT AND DISCUSSION

In the present study the salient changes in the land use pattern in Haridwar district are maintained and classified under the following major categories i.e., (i) Total reporting area, (ii) Forest, (iii) Barren and cultivated land, (iv) Current Fallow land, (v) Other fallow land, (vi) Barren and uncultivated land (vii) Land under non-agricultural uses (viii) Pasture land, (ix) Net sown area, (x) Area sown more than once and (xi) Gross cropped area (xii) Orchards, bushes, shrubs. The brief account of each category is given one after one here.

### Total Reporting Area

The reporting area in Haridwar district for land utilization was estimated at 243151 during the year 2015-16. It includes the land uses for different purpose like forest land (34.77%), barren and uncultivated land (1.13%), land under non-agricultural uses, pastures (0.02%), and Net sown area more than once and Gross cropped area (65.8%). The block-wise study of Haridwar district shows that the total reporting area was estimated at 31083 hectares in Bhagwanpur block, 23159 hectares in Roorkee block, 26887 he. in Narsan block, 47622 he. in Bahadradabad block, and 27763 he. in Laksar block, 14008 he. in Khanpur block, 72431 he. in Forest areas and 198 he. in urban areas. It is clear that the total reporting area is highest in Bhagwanpur block and lowest in urban areas.

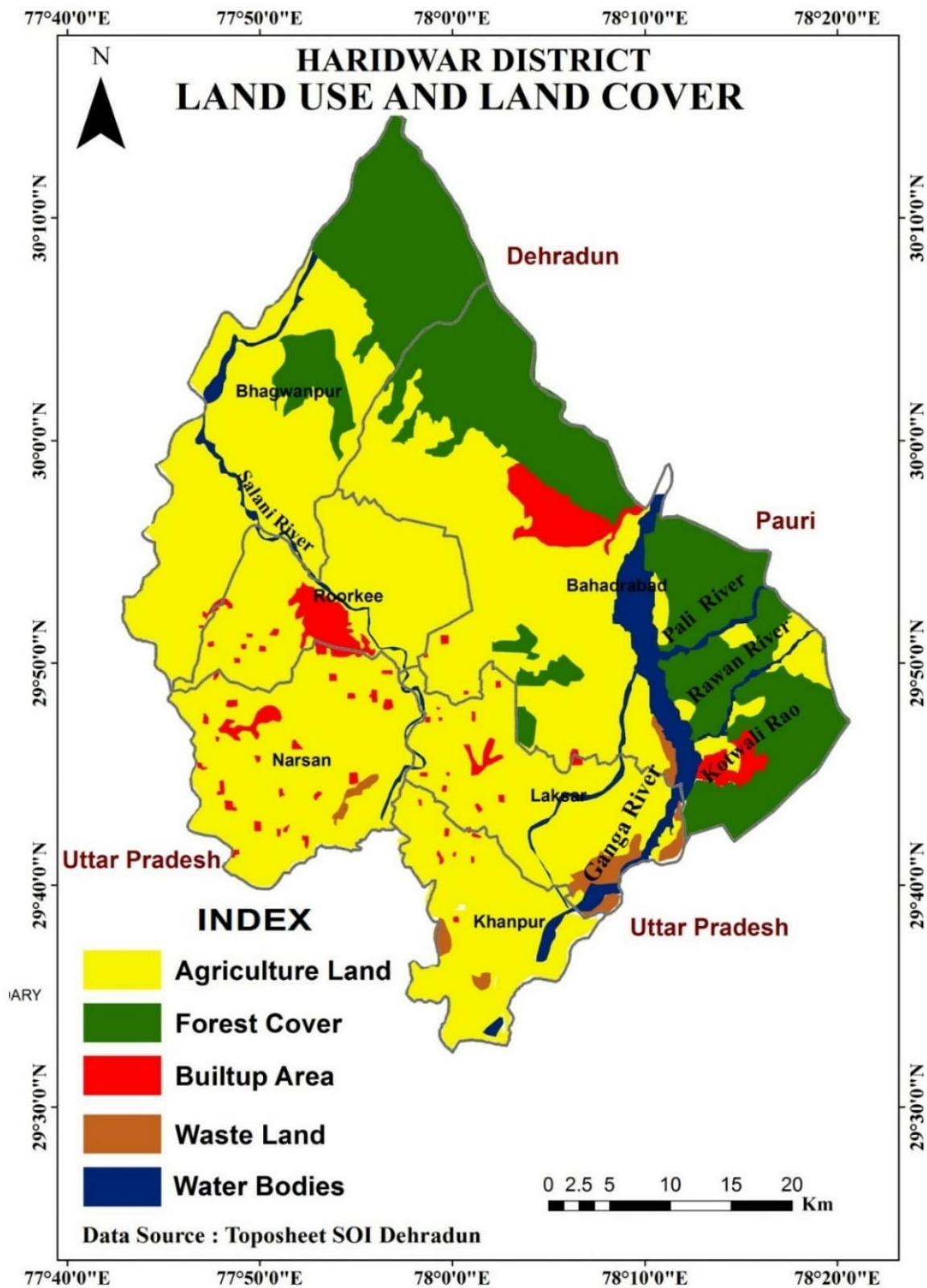


Figure Error! No text of specified style in document. Land Use and Land Cover in Haridwar District

## Forest

Keeping in view the multifarious tangible and intangible services rendered to humanity, management and conservation have a prime concern. The total reporting area of the Haridwar district is only 84537 hectares (34.77%) of the area is reported as the forested area. Bahadrabad block has 20.25% of the reported area under forest which jumps to higher percent on the basis of geographical area. Bhagwanpur block carries area (0.78%) under forest, mostly reserved forest area of Siwalik forest falling within Rajaji National Park.

## Barren and Uncultivated Land

This includes all barren and un-cultivable land like mountains, deserts, lakes, ponds, drainage etc. Land which cannot be brought under cultivation unless at a high cost, shall be classed as uncultivable whether such land is in isolated blocks within cultivated holdings. This category of land includes all such land which is practically useless or unproductive and virtually unfit for cultivation. The area under barren and uncultivated land accounts for 2750 he (1.13%). This land is highest (2.81%) in Narsan block and is lowest (1.00%) in Bhagwanpur block.

## Barren and Cultivated Land

The land under this category may be put for cultivation but they are lying as waste on account of a number of reasons. The reason may be enumerated as encroachment by weeds, floods, and erosion, poor drainage system, scarcity of water etc. A very low percentage of area constitute as barren cultivated land in the district with 0.73%. It is highest in Khanpur block (2.10%) and next to Laksar block (1.96%) and Bhagwanpur block, while in Narsan block it is very lowest with 0.42%.

## Fallow Land

It includes all those areas which have been temporarily kept out of cultivation due to one reason or the other for a period of at least one year but not more than four years of land. Fallow land is a part of cultivated land but it differs from the net sown area in the sense that, at the time of reporting the area covered by this class was without crops, although it was brought under cultivation during the previous agricultural season. The area under fallow land accounts for 3855 hectares (1.59%). It is highest in Roorkee block (2.87%) and next to Bhagwanpur (2.61%) and Khanpur block. It is lowest in Laksar block.

**Table Error! No text of specified style in document. Land Use Patterns in Haridwar District (2015-16)**

Blocks	Total reporting area	Forest (%)	Barren Cultivable land (%)	Current Fallow land (%)	Other Fallow land (%)	Barren Uncultivable land (%)	Land under non-agricultural uses (%)
Bhagwanpur	31083	243 (0.78)	216 (0.69)	451 (1.45)	812 (2.61)	312 (1.00)	4654 (14.97)
Roorkee	23159	-	147 (0.63)	437 (1.89)	665 (2.87)	491 (2.12)	4843 (20.91)
Narsan	26887	-	113 (0.42)	187 (0.70)	521 (1.94)	756 (2.81)	4309 (16.03)
Bahadrabad	47622	9643 (20.25)	472 (0.99)	970 (2.04)	1102 (2.31)	566 (1.19)	9465 (19.88)
Laksar	27763	1503 (5.41)	545 (1.96)	361 (1.30)	392 (1.41)	327 (1.18)	4131 (14.88)
Khanpur	14008	717 (5.12)	294 (2.10)	138 (0.99)	363 (2.59)	298 (2.13)	1043 (7.45)
Forest	72431	72431 (100.0)	-	-	-	-	-
Urban	198	-	-	-	-	-	198
<b>Haridwar district</b>	<b>243151</b>	<b>84537 (34.77)</b>	<b>1787 (0.73)</b>	<b>2544 (1.05)</b>	<b>3855 (1.59)</b>	<b>2750 (1.13)</b>	<b>28643 (1.78)</b>

*Source: Statistical Diary of Haridwar district 2016*

### Current Fallow Land

It represents the cropped area which is kept fallow during the current year. For example, any cultivated area, which is not cropped again in the same year, may be treated as current fallow land. This practice presents soil exhaustion and ensures better yields of crops in the year of its cultivation. The concentration of fallow land also varies in accordance with the amount of rainfall. Haridwar district has 1.05% of the reported area under current fallow land. It is highest in Bahadrabad block (2.04%) and lowest in Narsan block (0.70%).

### Land Under Non-Agricultural Uses

A large part of the land is not available for cultivation but these lands are considered to be arable land. Non-agricultural uses land covers a wide range of other uses. These lands are used for inhabitations, factories, roads for transportation, canals and reservoirs etc. Roorkee block has the highest land under non-agricultural uses i.e. 20.91% of the reported area, while Khanpur block has the lowest land under other uses with 7.45%.

Table 1.1 Land Use Patterns in Haridwar District (2015-16)

Blocks	Pasture land (%)	Shrubs, bushes Orchards (%)	Net sown area (%)	Area sown more than once (%)	Gross cropped area (%)
Bhagwanpur	13 (0.04)	365 (1.17)	24017 (77.27)	9082 (29.22)	33099 (106.5)
Roorkee	12 (0.05)	291 (1.26)	16273 (70.27)	6488 (28.02)	22761 (98.3)
Narsan	6 (0.02)	173 (0.64)	20822 (77.44)	6637 (24.68)	27459 (102.1)
Bahadrabad	5 (0.01)	823 (1.73)	24576 (51.61)	9610 (20.18)	34186 (71.8)
Laksar	6 (0.02)	80 (0.29)	20418 (73.54)	7330 (26.40)	27748 (99.9)
Khanpur	15 (0.11)	2 (0.01)	11138 (79.51)	3595 (25.66)	14733 (105.2)
<b>Haridwar district</b>	57 (0.02)	1734 (0.71)	117244 (48.22)	42742 (17.58)	159986 (65.8)

Source: Statistical Diary of Haridwar district 2016

### Pasture Land

Pastures and other grazing land include all grazing lands whether they are permanent pastures meadows or not. Village common and grazing land within the forested area is included under this head. Taking the area of Haridwar district as a whole then we find that the area under pasture is not appreciable. This accounts for 57 hectares (0.02%) only in Haridwar district.

### Net Sown Area

The total land area on which crops are grown in a region is called the net sown area. The area under net sown area accounts for 117244 hectares (48.22%). Khanpur has the highest (79.51%) area while it is lowest in Bahadrabad block (51.61%).

### Area Sown More than Once

When more than one crop is grown on the same field in the same year is included in this category. This area is highest in Bhagwanpur block with 29.22% and lowest in Bahadrabad block i.e. 20.18%.

### Bushes, Shrubs, and Orchards

The area under bushes, shrubs, and orchards denote all cultivable land, which is not included in net sown area but is put to some agricultural use. It occupied 1734 hectares (0.71%) of the total reporting area.

## Gross Cropped Area

This shows the total area put under cropping. It was 159986 hectares (65.8%) of the total reporting area.

**Table 2 Land Use Class of Haridwar District**

SI. No.	Land use class	Area (in q.km)
1	Agriculture Land	1485.31
2	Forest Cover	521.96
3	Built-up Area	129.28
4	Waste Land	46.68
5	Water Bodies	172.77

**Source- Himalayan GIS 2015**

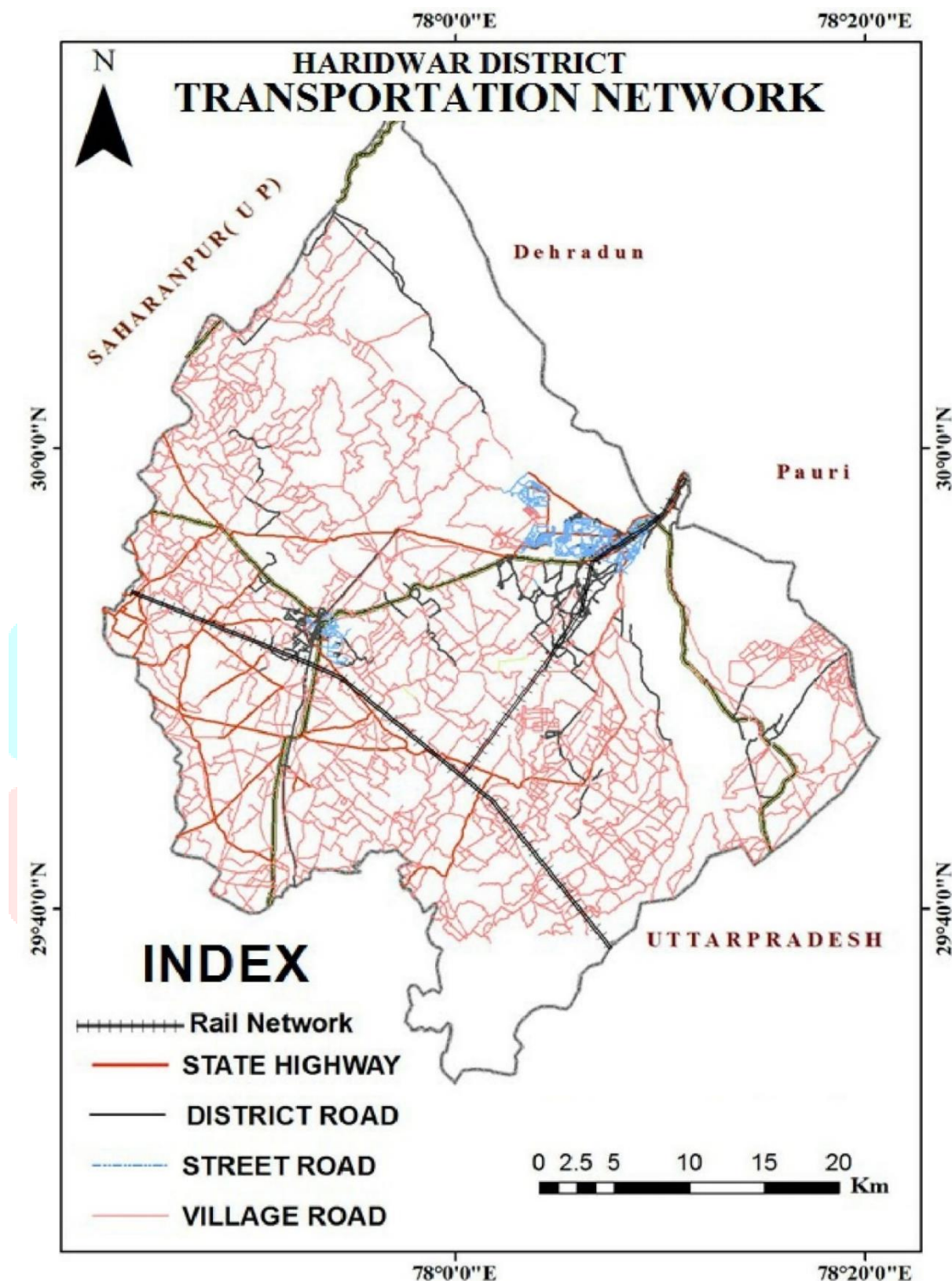
Above table depicts that agriculture land covers 1485.31 sq. km. area of Haridwar district and while others forests, built up area, waste land, and water bodies cover 521.96, 129.28, 46.68 and 172.77 sq. km. respectively.

## TRADE AND TRANSPORT

The prosperity of an area depends largely on the volume of trade at that place. In this regard, Haridwar is a prosperous district. Haridwar is rapidly developing as an important industrial hub of Uttarakhand since the state government agency SIDCUL established in 2002 and set up the integrated industrial estate. As a result of which infrastructural and transportation facilities have been increased. In this area many manufacturing units are coming and some of the reputed industries already placed here. There are so many industries and agricultural sectors like stone rolling mills, textile mills, paper mills, sugar mills, menthe oil, paint industry units and flour and rice mills on the other side there are many dairy products, floriculture, horticulture and fish sectors (Joshi, 2013). Its Ayurvedic medicines are exported to other parts of the country and abroad as well. Drawing, surveying and mathematical instruments manufactured at Roorkee are in demand from all over the country. Cane work and other jungle product are also traded. The district has numerous trade centers for distributing goods, whether imported or locally produced. Haridwar, Roorkee, and Mangalore are the main markets with sub-markets at Bahadrabad, Bhagwanpur, Landaura, and Laksar. Tourism is an important source of revenue for this district. Thousands of tourists and pilgrims are attracted to the district every year.

The district is well connected by rail and road transport. There are 13 railway stations (including halt) in the district, out of which, 6 stations are in rural areas. The length of the railway line passing through the district is 72 km.





**Figure 2 Transportation Network of Haridwar District**

The length of the railway line per thousand square km. the area is 30.1 km. Laksar and Roorkee are important railway junctions. The total length of roads in the district is 1,153 km. Main district roads are 116 km. long whereas the district and rural roads are 929 km. long. Roads under local self-government are 934 km. long while 379 km. long roads are under irrigation and sugarcane departments. The ratio of road per 1000 sq. km. the area was 1063.56

km. during 2009-10. During the time period, the ratio per one lakh population was 144.41 km. The district is well connected by road transport. Means of road transport available in the district are state road transport corporation buses and private buses, taxi, jeep, truck etc. Number of bus stations/bus stops is 393.

## Conclusion

According to the above description it is clear that Haridwar is a culturally rich region, people are indulging in different type of cultural activities and enriching their livelihood. As the agriculture is the main source of income and there are 1485.31 sq. km agriculture land in Haridwar which is highest land cover in other categories, so it is good symbol of Haridwar prosperity in benefitting the people livelihood. Except this people are indulging in so many other cultural activities like trade and transport, which is also benefitting the people directly or indirectly.

## References-

1. DC MSME. (2007). Brief industrial profile of District Haridwar, Micro Small and Medium Enterprises- Development Institute, Nainital, Uttarakhand, India. Retrieved from [dcmsme.gov.in/dips/DIPSR%20-%20Haridwar.pdf](http://dcmsme.gov.in/dips/DIPSR%20-%20Haridwar.pdf)2007.
2. Joshi, N. (2013). Development of industrialization in Haridwar and the application of strengths , weaknesses , opportunities and threats ( SWOT ) analysis, 170–173.
3. Kanwar, J. S. (2000). Perspectives and Policies for Land use Planning. *Journal of Indian Soc. of soil science*, 48 (4), 636-639.
4. Lalljee, B., & Facknath, S. (2006). Sustainability and Land use change in Agriculture. *Sustainable Agriculture: Issues in Production Management, Agronomy and ICT Application*, 16-25.2
5. Monga,N., Kaplash, S., Bhalla, M. (2016), Critical Analysis of Economic Impact of Spiritual Tourism in Haridwar, *International Journal of Research Management, Economics and Commerce*, Vol. 6 Issue 05,pp. 7-11.
6. Ram, D. (2002). Land use in Haryana: Past, Present and Future. *Geographical Review of India*, 64(2), 148.
7. [www.censusindia.gov.in](http://www.censusindia.gov.in).
8. District Statistical Diary of Haridwar, 2016.
9. [shodhganga.inflibnet.ac.in](http://shodhganga.inflibnet.ac.in).
10. <https://simple.wikipedia.org/wiki/Culture>.