

**Article****Changing Geo-economic Structure of Uttarakhand State**

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Uttarakhand state has entered in the 25<sup>th</sup> year of its formation and this length of time could be considered sufficient for setting the direction of development and its eligibility to cross the threshold of development as per its resource base, challenging problems in the framework of India's development scenario i.e. demand, supply, import and export requirements of the day. Prof. S.C. Kharkwal has published book entitled Uttarakhand -25 Years of Development" and it carries the whole range of statistical information relating to its primary resources, agriculture, horticulture, industry, infrastructure, health, education and income structure. In the formative years of state two types of sign boards were visible along state national highways- 1. Energy state (Urja Pradesh) 2. Tourism State (Paryatan Pradesh) 3. Clean State (Swachh Pradesh).

In addition to above two, the third one is the basic requirement of Tourism development. Hydro-electricity production in 2011-12 was 5261.8 MU and it is reported to be 5433.0 MU in 2022-23. Similarly gross tourist was. Tourism has immense potential and capable of playing a lead role in income generation and creating employment opportunities. It is very difficult to decipher the direction of economic development. Level of infrastructural development is terribly good realizing the impact of monsoon rains, recurring landslides, flash floods etc. Construction and operation of Railway Line, four- Lane pilgrim road and air strips- Helipads etc. are going to maintain satisfactory level of mobility in the near future. State has launched a number of economic development programs such as, fruit belts and government orchards with required infrastructure, Ram Bans project, herb culture project, tea garden project, homestay programme

There may be some more initiatives and all these demand evaluations by professionals not by government machinery. In this issue of Society's research News Bulletin, we are starting with the Primary resource base of Uttarakhand. Table 2 exhibits the status of primary resources on district unit. Uttarakhand carries 45.4 (India 21.8). percent forest cover (SFR 2023) while forest area as per reported area is 63.5 percent. On account of three-dimensional relief, reported area of Uttarakhand is 12.2 percent larger than the geographical area and its keeps on changing. On the basis this area discrepancy, the average slope of reported area is 9.6° and it ranges between 18.5° in the Tehri district to 10.5° in Rudraprayag district. Distribution of forest area into very dense, dense and open categories make comparison of total forest area on District unit problematic. In order to overcome this handicap Weighed Forest Area has been computed giving 1.0, 0.5 and 0.3 multiple for the respective categories and the result are given here.

*Table 1: Population (2011) Per Sq. Km. Area of Forest (2023) in Uttarakhand State*

Persons (2011/ km <sup>2</sup> )	Districts Total Forest Area	Persons (2011/ km <sup>2</sup> )	Districts Weighed Forest Area
Below 500	Uttarkashi, Chamoli, Tehri, Pauri, Champawat, Rudraprayag	Below 700	Uttarkashi, Chamoli, Pauri, Champawat
500-750	Pithoragarh, Bageshwar, Nainital	700-1100	Tehri, Rudraprayag, Pithoragarh, Bageshwar, Nainital
750-1500	Almora, Dehradun	1100-2000	Almora
Above 1500	U.S. Nagar, Haridwar	2000-5000	Dehradun
		Above 5000	U.S. Nagar, Haridwar

*Source : India State of Forest Report,2023*

Table 2: Primary Resources of Uttarakhand (Figures in percentage geographical area of Uttarakhand State 2011)

District	Geographical area	Forest Area %	Forest Area Sq. Km.	Dense Forest	weighted forest area	NSA	Horticulture	Infrastructure	Person 2011
Uttarkashi	15.2	37.9	3036.2	618.6	1686.5	6.27	0.74	1686.5	477.8
Chamoli	15.3	33.8	2710.1	443.1	1441.2	6.86	1.96	1441.2	550.4
Tehri Garhwal	6.95	56.7	2064.4	272.9	1027.2	10.74	0.26	1027.2	994.0
Pauri Garhwal	10.1	63.7	3396.7	576.6	1804.0	9.69	2.62	1804.0	678.3
Dehradun	5.9	52.2	1611	663.3	1069.8	13.19	6.45	1067.8	20139.7
Rudraprayag	3.8	57.6	1142.3	251.9	519.4	1.57	2.42	519.4	750.2
Pithoragarh	13.5	29.4	2080.8	505.5	1172.6	8.01	1.55	1172.6	1026.6
Almora	6.2	54.7	1719.8	199.1	822.3	10.82	2.73	822.3	1836.3
Nainital	8.5	71.6	3044.5	772.9	1802.9	12.81	3.20	1802.9	1060.5
Bageshwar	4.2	56.3	1262.7	161.6	645.2	2.03	2.36	645.2	1116.9
Champawat	1.8	69.3	1224.2	366.9	743.5	5.71	1.99	743.5	637.3
Mountainous Ds	90.8	48.0	23293.1	4832.4	6.38	44.50	2.23	130281.3	493.0
U.S. Nagar	4.8	16.8	428.1	148.2	270.1	5.12	12.50	270.1	8821.3
Haridwar	4.4	20.6	1012.0	222.9	552.6	7.20	14.10	552.6	7442.5
Plain district	9.2	19.56	959.0	234.6	47.85	6.81	12.43	591.2	5986.7
Uttarakhand State	100	45.4	24303.8	5266.6	13.38	5.26	4.00	13281.3	759.4

Source: 1. Dr S.C. Khrkwal: Uttarakhand 25 years of Development (Hindi) Winser Pub. Dehradun (Based on Statistical Dairies of Uttarakhand), Page 96-99.

Table 3: Main Forest produce in Uttarakhand(Figures in 000 units)

Year	Timber Cubic metres Logs	Fuelwood Cubic metres Bundles	Lisa ( resin ) Quintals
2000-01	212.55	40.68	111.52
2007-08	310.58	68.58	192.58
2014-15	239.52	171.27	144.15
2018-19	222.51	65.12	96.50

Source : Dr S.C. Kharkwal: Uttarakhand 25 years of Development (Hindi) Winser Pub. Dehradun (Based on Statistical Dairies of Uttarakhand), Page 96-99.

Table 4: *Changing Land Use Pattern in Uttarakhand State 2021-22 (In percentage of reported area)*

District	Forest	Barren etc.	Scrubs, Garden	Other than Ag.	Net Sown Area	% Changes in N. S. A		
						2003-10	2010-15	2015-22
Uttarkashi	88.8	5.04	0.53	0.74	3.47	-1.51	-1.37	-0.04
Chamoli	59.41	10.66	16.86	1.96	3.56	-0.15	-0.1	0.21
Pauri Garhwal	66.23	1.19	0.98	2.62	4.46	0.49	-0.81	-2.28
Tehri Garhwal	57.56	5.47	4.12	0.26	8.97	-1.03	-5.04	-1.4
Dehradun	55.6	6.45	4.56	6.45	9.27	-0.97	-0.57	-2.82
Rudraprayag	76.82	3.59	6.1	2.42	7.83	0.26	0.16	-0.71
Pithoragarh	72.33	2.84	5.59	1.55	8.48	-0.69	-5.07	-1.02
Almora	50.8	5.25	8.5	2.73	12.48	-5.39	-3.98	-4.3
Nainital	73.08	0.22	5.36	3.2	9.51	-0.04	-1.09	-1.17
Bageshwar	52.98	3.22	13.86	2.36	9.98	1.29	-0.57	-1.96
Champawat	56.74	3.16	9.46	1.99	5.33	1.14	-1.49	-2.86
Mountainous.Ds	66.33	4.48	6.67	2.23	6.38	-0.95	-1.2	-4.74
U.s Nagar	33.53	0.39	0.25	12.5	47.65	-3.57	-0.34	-1.76
Haridwar	34.48	1.29	0.53	14.1	45.49	-2.28	-0.69	-3.97
Plain district	33.97	0.81	0.38	13.24	46.64	-3.30	-0.24	-2.97
Uttarakhand state	63.51	4.16	6.12	3.19	9.89	-1.38	-1.38	-1.79

Source : Dr S.C. Kharkwal: *Uttarakhand 25 years of Development (Hindi)* Winser Pub. Dehradun (Based on Statical Dairies of Uttarakhand),Page 96-99.

Agricultural Land (Net Sown Area) shows wide variation (3.47% Uttarkashi – 12.48% Almora) and six districts (Rudraprayag, Tehri Garhwal, Dehradun, Nainital, Bageshwar, Almora) carry 7.5-10.0 percent NSA. On the other hand, plain districts have almost identical (45.5-47.65%) Net Sown Area. Mountainous districts of Uttarakhand have recorded 4.74 decrease in NSA due to increasing fallow land under influence of population shift from interiors to low lands (foot hill piedmont zone) while plain districts owe this change due to urbanization which is reflected in the land use category 4 denoting land put to use other than agriculture. We may refer it to cultural- infrastructural use carrying water bodies settlement, roads, water and electricity networks.

Horticultural land use is significant to mountain terrain accounting for 5.25 percent of REPORTED area and it is nearly constant since 2010-11. Among hill districts horticultural area is minimum of two percent in Rudraprayag, Bageshwar and maximum of 16.1 percent in Nainital, Dehradun (14.98) districts. Tehri, Pauri, Pithoragarh, Almora display area under fruit and vegetables above 10 percent. Yamuna Valley representing mountainous part of Dehradun, Western part of Uttarkashi district and Jaunpur Block of Tehri districts is the core of horticultural activities in Uttarakhand. Potato production during rainy season is a high demand commodity. Area under potatoes increased by 47.9 percent during 2005-22. Much more can be done in this area to harness its full potential. Transport problem during monsoon season, recurrence activity disrupt road mobility is very serious concern. This problem needs to be overcome by Crop Transport Insurance Policy or air lift or innovative rope-ways mechanism.

Table 5. Changes in Horticulture Area and Production( Percentage of Uttarakhand ) 2010-11

District	Area	Production	Fruit Area	Vegetable Area	Percentage Changes +	Year	Fruits	Vegetables	Main Horticulture Crops
Uttarkashi	6.27	7.37	8.72	14.29	2005-6	692.5	461.1	276.9	
Chamoli	6.86	8.81	5.51	2.95	2010-11	792.8	606.5	424.3	
Tehri Garhwal	10.74	6.58	11.66	11.36	2014-15	786.0	657.2	452.5	
Pauri Garhwal	9.67	3.97	12.62	6.93	2021-22	648.9	656.6	367.3	
Dehradun	13.19	12.37	14.98	16.45					
Rudraprayag	1.57	0.82	1.88	1.74					
Haridwar	7.20	11.54	8.86	6.08					
Garhwal region	55.50	57.26	68.71	59.69					
Pithoragarh	8.01	8.29	10.89	7.83					
Almora	10.82	15.86	13.43	6.38					
Bageshwar	2.03	2.01	2.04	2.17					
Champawat	5.71	2.51	4.60	4.42					
Nainital	12.81	12.90	16.09	8.12					
U.S. Nagar	5.12	7.67	4.22	11.50					
Kumaon region	44.50	48.74	31.29	40.31					
Uttarakhand	100	100	100	100					

Source: Dr S.C. Kharkwal,Page 148,150,152

The contribution of primary sector in the economy of Uttarakhand is 10% (2023-24) but the critical question is relative contribution of primary sector of mountainous area in the economy of state. The falling population (human & cattle) and increasing area of long fallow land, are the indirect markers of the multidimensional decline in the overall scenario. However bright spots of Agro-tourism oasis distributed randomly in the whole mountainous territory are symbol of hope for the vibrant future. We can't reverse rural-out migration from the state and within as well. This daydreaming must stop because it is universal phenomena and it must be viewed as by-product of the development gaps, urbanization and educational facilities as well as growing aspirations and market forces. Primary sector in Uttarakhand need reform in data collection procedure. Some suggestions are given here:

1. Standardization of Land use categories and reporting of factual (on ground) data. Land use categories of Scrubs- garden (category 3) shows unrealistic variation (Uttarkashi 0.53 – Chamoli 16.86%) while terrain and cultural history is same. Similar discrepancy is noticed increase of category 2 (barren etc.). It is advisable to assess area under first 3 categories by Remote Sensing methods using high resolution data. Similarly, horticulture related data procurement demands more precise information by skilled personals. State Government must setup a self-sustaining agency to market the specialized agro-horticultural products, irrespective of their quantity.

2. It will help in creating demand for mountain (Uttarakhand) products in the mega cities of country.
3. Long standing open areas within Reserved Forests are required to be utilized for Tourism and recreation activities.

