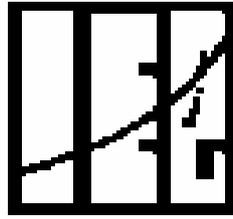


**INEQUALITIES OF INCOME OPPORTUNITY IN A HILLY  
STATE: A STUDY OF UTTARAKHAND**

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# **Inequalities of Income Opportunity in a Hilly State: A Study of Uttarakhand \***

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## **Abstract**

*This paper examines the sources of inequality of income opportunity in the Himalayan state of Uttarakhand. It is based on data collected from a survey over three clusters in disparate geographical regions of the state. The econometric analyses show that the rural sector lags in household income opportunities not just due to lesser access to educational opportunities, but also due to non-educational factors, and because the same education provides unequal incomes between the sectors. The analysis also reveals other sources of inequality such as the age and gender composition of the households. Moreover the implications of such factors vary between hilly and plain areas. The study highlights the need to address the quality of education and to design policies specific to regional demands.*

**Key words: Inequality, Household Income, Education, Uttarakhand, etc.**

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## **Introduction**

The Indian economy has grown at a fast pace in the recent past and this has resulted in an optimism on most fronts. In such a milieu however, it is extremely important to ensure that all sections of the population share the fruits of this success. The Constitution of India in its Preamble mandated the Equality of Status and of Opportunity to all the citizens and also prohibited any form of discrimination in its Article 15. Yet, inequality in income opportunities has been a steady feature of the Indian economy and society. The persistence of inequalities has always drawn the attention of scholars, activists and policy makers. In the literature, the persistence of underdevelopment in large pockets has been explained by traditional theories such as the 'vicious cycle' (Nurkse, 1953), 'cumulative causation' (Myrdal, 1957) or perhaps by an 'urban bias' in the development process (Lipton, 1977). Although the traditional and modern theories do predict convergence of unequal regions and groups (Lewis, 1954, Kuznets; 1955, Sala-i- Martin-2002) and spatial diffusion of commercial success (Elizondo and Krugman, 1996), there are numerous empirical examples to the contrary. India's post-reform experience has also failed to indicate spatial convergence in any perceptible degree (Vakulabharanam, 2005; Bhattacharya and Saktivel 2003; Kar and Sakthivel 2003; Marjit and Mitra 1996).

Among the most marginalized sections in India, are people living in geographically fragile areas like the Himalayas, where conventional agricultural and industrial developments face severe constraints. In this paper, we analyze the various types of inequalities in income that characterize these hilly regions even in this era of high growth. It is based on a survey of the Himalayan state of Uttarakhand and examines the factors that lie behind income variation among households in this state. It is obvious that the income earning capability of a household is shaped by its demographic composition. The proportion of the working-aged members in a household would represent its labour power and be an important determinant of the household income. Another factor that could determine the income earning capability of the household is the work-experience of the working members symbolizing the accumulated learning that creates human capital. However, the advantage of experience has a chance of being nullified under rapid technological change when newer entrants bring more relevant skills making the older experience obsolete. If the

market has lesser opportunities for women or if the social norms work against women, the gender composition of the working age members would also matter. Education is another income enhancing factor that is increasingly receiving policy attention in recent times for various reasons. Education is an important door towards higher income opportunity. Besides it has many other social and inter-generational benefits of immense value. Education is a 'capability' (Sen, 1999 and 2003) that underlies the advocacy of 'investment in man' and has been sometimes considered even more important than physical and tangible capital formation (Myrdal, 1957, 1968). The sources of modern economic growth are sought in the changing quality of labour and capital rather than in the accumulation of conventional units of physical capital and increased application of hours of labour (Kuznets, 1966). A strong empirical regularity is inescapable between the educational attainments of a population and its productivity and performance in the market (Schultz, 1988). Education brings awareness and knowledge of how to make use of available opportunities and resources. It also confers greater bargaining power in the market. In the case of a population engaged in agriculture empirical investigations have found the returns to schooling of the household heads to be ranging from negative to insignificant positive but when family members' education is also considered, the returns are found significant (Taylor et. al., 2000) reflecting the fact that even children's education influences the choice of activities, decisions of resource allocation and the farm incomes. Apart from these intrinsic characteristics of a household, its geographical location also determines its income earning capability. Theories of the urban bias (Lipton, 1977) have shown that urban areas get priority in the development process and this leads to income disparity between rural and urban areas. Thus households in a rural location will have lower income opportunities compared to urban households. Finally, for a hilly state, household incomes are also determined by altitude. The hilly regions of the state will provide less income earning opportunities than those in the foothills or the plains because the difficulties of communication and the sparsity of population discourage commercial enterprises from building up in the hills.

It is clear from all this that there may be many reasons for inequality of income opportunity to persist in a hilly state. At the same time, there is a conscious public policy motivated to bringing down disparities and promoting balanced development. In this paper we try to identify which of these are significant for the state of

Uttarakhand. Is there a gender bias in income opportunities in this state? How far do educational attainments matter? Does rural residence impact the income possibility of a household and will the spread of educational facilities erase the disparity? Do households in hill areas face similar implications for disparities as households in the plains? These are some of the questions we probe in this paper.

### **An overview of Uttarakhand**

Uttarakhand is a Himalayan state that has been recently carved out of the state of Uttar Pradesh (UP). More than 90% of the state is in the mountains but a small part lies in the plains. The state is largely rural in character. Due to the harsh topography it is a migration prone state. The people of Uttarakhand have been described as extremely 'progressive' (Joshi 1995) as demonstrated by their educational achievements and their liberal revolutionary movements one of which is symbolized by their achieved emergence as a state separate from Uttar Pradesh. The achievement of a relatively high literacy rate of 72.8% is noteworthy considering that most parts of the state are 'remote' and difficult to access for the welfare directed state machinery. However, significant rural urban disparity in literacy tarnishes this achievement. For every person not literate in the urban sector there are on the average 4.9 such persons in the rural region (Census 2001). The corresponding ratio of total populations in the two sectors is less at 2.9. The urban to rural ratio in literacy rate is about 1.2. Table 1 and 2 further portrays some of the disparities in basic education with a gender dimension as illuminated by the NFHS data. The rural urban disparity is most glaring at higher levels of education. A primary data based study also found several social dimensions of inequality in education in the state (Sharma and Ghosh, 2007).

**Table 1: Basic Educational Attainments and Infrastructure**

		UTTARA- KHAND	UTTAR- KASHI	NAINITAL	DEHRADUN
<b>Literacy rate</b>					
Male	Rural	82.74	83.55	87.62	80.42
	Urban	87.21	93.93	87.00	90.37
Female	Rural	55.52	45.10	67.61	61.57
	Urban	74.77	78.48	77.16	79.61
Total	Rural	68.95	64.70	78.02	71.42
	Urban	81.50	87.46	82.40	85.30
<b>Higher Secondary complete and above</b>					
<b>Male</b>	Rural	12.10	-	-	-
	Urban	37.40	-	-	-
Female	Rural	4.80	-	-	-
	Urban	32.00	-	-	-
<b>Population Per Total School Total</b>					
	Rural	375.02	362.16	371.05	452.27
	Urban	913.40	849.04	973.96	899.23
<b>Population Per Primary School Total</b>					
	Rural	506.12	362.16	520.18	632.98
	Urban	1511.31	849.04	1605.87	1521.61
<b>Pupil Per Teacher In Primary School Total</b>					
	Rural	28.49	24.78	25.82	25.66
	Urban	26.38	19.03	29.15	22.36

Source: Census 2001, NFHS and NCERT.

The evidence on the gender perception in the state is rather ambiguous. The hill culture has been conventionally credited for superior gender values and this is confirmed by the sex ratio (962 females for 1000 males) which is higher than the all-India figure (933 females for 1000 males) and particularly so in the rural sector (1007). However, this view is far from confirmed when the sex ratio of the 0 to 6 years age group is considered (908 against 927 in India). Often the gender bias reflects in a society's labour market and its social norms towards women's work participation. Thus in Uttarakhand, male out-migration, rather than gender sensitivity, is a more relevant factor for explaining the overall sex ratio.

**TABLE2: RURAL URBAN DISPARITIES IN DEVELOPMENT FROM PRIMARY AND SECONDARY INFORMATION: SUMMARY STATISTICS (URBAN/RURAL)**

<b>Development</b>				
<b>Indicators</b>	<b>PRIMARY SURVEY</b>	<b>Secondary 1998-99</b>	<b>NFHS</b>	<b>Secondary data source</b>
Male				
Literate (0)	1.06	1.12	1.04	Census 2001
Primary and Above	1.13	-	1.13	
School complete	2.00	-	3.09	
Female				
Literate (0)	1.13	1.29	1.47	Census 2001
Primary and Above	1.20	-	1.88	
School complete	2.00		6.40	
Income (1)	1.77	1.52	-	NSSO 1999-00

**NOTE:** -(0) Literate includes only schooled population in Primary data.

(1) Rs per capita per month, primary data are for income (converted) and secondary are consumption expenditure.

### **Data sources and sampling procedures**

Uttarakhand is a newly created state and hence data paucity is a problem. While secondary data provided by various official sources are utilized for support, this study is mostly based on data collected from a sample survey made over three clusters in three different districts. The clusters chosen purposively for the Survey belong to the districts of Dehradun, Nainital and Uttarkashi. The choice of the districts is aimed at covering a broad spectrum of the state. Uttarakhand is roughly triangular in shape and these three districts are located at the three corners. The districts also represent the varied geography present in the state. Uttarkashi is completely hilly, located away from the Indian mainland, relatively more rural and sparsely populated. It is well known for tourism and pilgrimage attractions but is regularly hit by landslides and earthquakes. Nainital is partly hilly and partly plain and is more urbanized and populated. Tourism and forestry are its main sources of income generation. Dehradun, a district in which the state's capital is located, is largely in the plains and is mostly urbanized. It has major industries and reputed institutions in its vicinity.

The three districts also present a balanced profile of occupations in agriculture, manufacturing and trade and services as seen from the Census (1991) data.

One urban centre is selected from each district, again keeping a balance in occupation in view. Rishikesh in Dehradun District, Haldwani cum Kathgodam M.B. in Nainital District and Uttarkashi M.B in Uttarkashi district are the urban centers (UC) selected. From an urban center, a total of 120 households are chosen by stratified random sampling from among three different urban blocks and with the strata based on the occupational profiles of households. For each UC six villages are selected at increasing distances from the UC within a radius of about 45 km to demarcate the hinterland. The Village and Town Directory 1981 (latest) is used to select two villages from each of three 'remoteness' categories namely least remote –1 to 10 km from the UC; remote – 11 to 20 km from the UC; and most remote – 31 or more from the UC. In the case of only the large district Uttarkashi, since there are very 'remote' but inhabited villages, the range for the farthest village has crossed the 40 km mark. The selection procedure for the six villages at increasing distance from the urban centre keeps in view different considerations such as the adequacy of the number of households in a village (a minimum of 45 households) and balanced shares of their population engaged in the primary and non-primary sectors. The village population is stratified by farm and occupational classes. A random sample of 40 households is drawn from a village giving a total of 240 households surrounding each UC and 720 households for the rural sector. Along with 360 urban households, a sample of 1080 households is drawn in the two sectors together. The survey was conducted in June-July 2004. The sample households in the rural and urban areas had questionnaires circulated to them soliciting information on various social and economic aspects of their livelihoods.

### **An overview of the three sample districts**

The population of Uttarkhand is more rural (74.4%) than that in India (72.2%), with a population of 8 million spread over 13 districts. Dehradun crosses the one million mark while Uttarkashi, a spatially large district records a population less than half that of Nainital. The population density of Uttarkashi is only 37 per sq km, that for Nainital is close to the state average of 159, while that of Dehradun is much higher.

Going by the census definition of the rural and urban sectors, Uttarkashi is highly rural with 92% of the population residing in rural areas, while the figure is a much lower 65% for Nainital and 47% for Dehradun. It may be noted that due to population growth the number of urban centers in this largely rural state has increased over time as the status of villages convert into towns (classification based on Census definition of the two sectors see Appendix 1). Also notable in Uttarakhand is the correspondence between geography and urbanization of a district. More hilly districts remain more rural in population share than those plain and despite conversions of status, most hilly districts have less than 10% of population in urban areas. The three sample districts confirm this as the most hilly district, Uttarkashi, remains highly rural in contrast to the other two districts (Table 3). The advantage of communication in plain areas possibly plays a key role in promoting economic activities that lead to urbanisation and a consequent concentration of population.

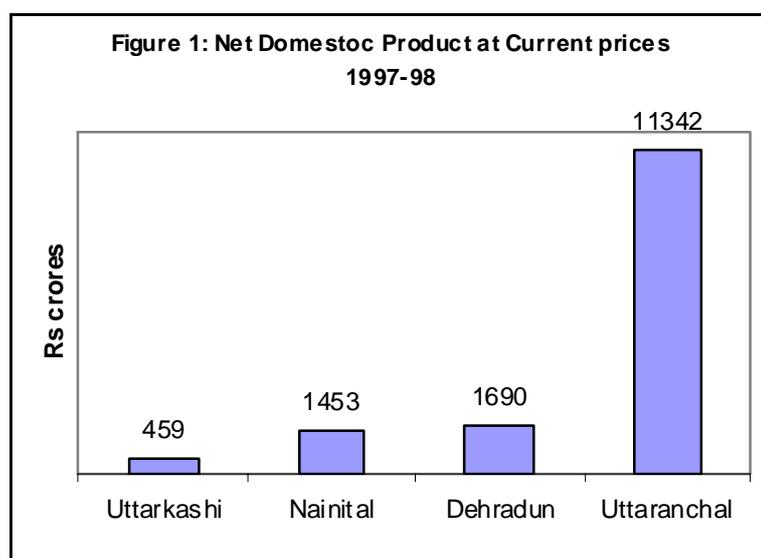
**TABLE 3: RURAL POPULATION 2001**

	Population		Population Density	State's share of Population %		Rural Share in State Population
	Total	Rural		Total	Rural	
Uttarkashi	294179	271255	37	3.47	4.30	92.21
Nainital	762912	493126	198	9.00	7.82	64.64
Dehradun	1279083	601965	414	15.08	9.54	47.06
Uttarakhand	8479562	6309317	159	100.0	100.0	74.41

Source: - Census of India.

Data from the State Planning Department, Government of Uttarakhand, reveal a highly concentrated pattern of income as measured by the district domestic products (DDP) in favour of the plain districts. The bar diagram in Figure 1 shows that Uttarkashi is at the bottom of the scale, while Dehradun, which is closely followed by Nainital, is at the top. This inequality between the hills and the plains is because Uttarakhand is largely an agriculture-based state but the topography in the hills impose serious impediments to modern agriculture hindering irrigation and mechanization and presenting inimical conditions of soil fertility, slope and farm size. The condition is also as hostile for industries. The number of large and medium

industries reported (Uttarakhand at a glance 2005) up to March 1998 is 165 generating an employment of 460,000 but of these 140 units are in Dehradun and Nainital alone. Small industries constituted on the pattern of 'Khadi and Village' industries are more dispersed but the employment of 25000 is not large for the state. Agriculture remains the main livelihood of the people despite the constraints. Horticulture, food processing, pharmaceutical industry, medicinal plants and organic farming are now identified as of strength in this hilly state. Unemployment is high with unemployed persons in live registers reaching three lakhs in 2002-03.



Recent endeavors of the state towards providing greater education to the people with an emphasis on the school level are reflected in the statistics given by the NCERT. The government has been on a drive to provide schools and especially primary schools within close range of the habitations even though the state is known for its scattered population and inaccessibility of many villages. More than 80 % of habitations in the state have a primary school within it or in a range of 1 km, there is a school for every 375 population in rural areas compared to 913 in urban areas and the pupils per teacher ratio in primary schools is 28.5 close to 26.4 in urban areas. The enrolment ratio in rural Uttarakhand (105) is higher than at the all India level (92) and neighboring Uttar Pradesh (88). Similarly, the pupil teacher ratio is better than for rural India (44) and rural Uttar Pradesh (61). Uttarkashi now has a better population-to-school ratio in the rural sector (267) compared to Nainital (371) and Dehradun (452). Uttarkashi also has the lowest pupil to teacher ratio among the three districts.

## **Unequal income opportunities**

In this section we use regression analysis to study the different types of income inequalities faced by the people from this state. The endogenous or dependent variable in the regressions is PCIN, the per capita monthly household income. Since we are interested in the income opportunities in the areas where the population resides, we have considered only resident incomes of families, i.e., incomes net of remittances to these families (from outside their places of residence). We postulate that the exogenous variables that determine the per capita family income include PCW i.e., the labour power of the family (measured as the proportion of family members in the working age group), and AVAGE, which is the work-experience of the family (measured by the average age of the working aged members of the family). Apart from these two variables, we include a number of other variables in our regression exercise in order to analyze various types of income inequality in this region.

The regression analysis adopts a multi-step method to investigate the different types of inequalities in income opportunities in these regions. The first step attempts to analyze the gender bias in income opportunities. Accordingly, apart from PCW and AVAGE, equation 1 also includes a variable GENDRATIO, which is equal to the ratio of females to males among the working aged members in a household expressed in percentage. The regression coefficient of this variable clearly captures the income earning capacity of female intensive households in this region.

$$PCIN = a_0 + a_1*PCW + a_2*GENDRATIO + a_3*AVAGE \quad \dots(1)$$

The second step in the regression exercise attempts to analyze the inequalities in income between skilled and unskilled workers as measured by their education. In order to do this, equation 2 includes three more variables pertaining to the educational attainment of the families. These variables are (i) school education (PCSC) measured as the percentage of members in the household with education beyond primary stage but only up to school level (ii) higher education (PCHI) measured as the percentage of members in household with education beyond school level and (iii) professional education (PCPROF) measured as the percentage of members in household with

professional education. Thus, in this study we have considered the education levels of all the household members as a determining force rather than only the education of the household head.

$$PCIN = a_0 + a_1*PCW_i + a_2*GENDRATIO + a_3*AVAGE + a_4*PCSC + a_5*PCHI + a_6*PCPROF \quad \dots(2)$$

Equations 1 and 2 have focused on unequal income opportunities at the household level. We shall next look at sectoral and regional inequalities. The third step is to analyse the urban disparity in income opportunities that go against the rural sector. In order to capture this aspect, equation 3 includes a variable DRURAL, which is a dummy for the rural sector. This variable is used both as a slope dummy to capture the differential returns to education between rural and urban areas and as an intercept dummy to capture other factors that lead to rural-urban disparity in incomes. The rural interaction with professional education is considered irrelevant and omitted due to the unbalanced distribution of education between the sectors and small presence of the category in the rural sector (see Appendix 1A).

$$PCIN = a_0 + a_1*PCW + a_2*GENDRATIO + a_3*AVAGE + (a_4*PCSC + a_5*PCHI)*(1+\alpha*DRURAL) + a_6*PCPROF + \beta*DRURAL \quad \dots(3)$$

The fourth step compares the role of the different factors in creating income opportunities between the hills and the plains. Given that the Uttarkashi cluster in our sample is at a high altitude in the mountains while the Dehradun and the Nainital clusters are from the foothills, we have divided the sample into two groups, one consisting of the Uttarkashi cluster representing the hills and the other consisting of the pooled data of the Nainital and Dehradun clusters representing the plains. We have estimated equation 3 separately for these two groups in order to capture the differences between the hills and the plains.

The results of this four-stage regression analysis are presented in Table 4. In the first stage, equation 1 shows that household income is largely explained by the size of the

working age population in the family with a positive and significant effect of experience and a statistically insignificant gender effect. The  $R^2$  values show that at this stage, the fit is poor. In the second stage, the inclusion of educational variables improves the fit considerably. Education at any level is found to be income enhancing and higher education appears to have the strongest influence. The impact of raw labour and experience becomes weaker while the gender effect, which is unfavourable towards female intensive households, gets stronger although still not statistically significant. The third stage captures the rural-urban disparity, and based on the significance levels of the coefficients, both the slope and the intercept effects are retained in the model. Thus the rural-urban disparity in income opportunities work through two possible channels: first, through the returns to education and second, through other residual sources of income. This disparity brings down the income earning capacity of all types of education in the rural sector, although the differences are insignificant for school education. In other words, income earned with school education is least affected by rural-urban disparity, but higher education confers much higher earnings to urban individuals compared to their rural counterparts. The equation also shows that labour power is significant even after controlling for all types of educational attainments. This means that even with no education, labour power, measured by the share of working aged members, can enhance household income, but the earning potential increases considerably with higher education of the household members. The coefficient of the gender variable shows that after controlling for other factors, households with a greater share of women in the working age have lower incomes although the coefficient is significant at 10%. This has important implications for a state where the working aged population often tends to be female dominated due to out-migration of males. Finally even after controlling for age, gender and education, the rural household is still likely to earn a significantly lower income than the urban household reflecting a significant dimension of the bias not explained by demography and education. Thus, a household of size 5, with all its members being school educated earns Rs. 2100 more than the one that has no member having more than primary education. Similarly a household with all its members having higher education is better off by the substantially greater amount of Rs.12,650. However the rural household, in the first case is likely to earn Rs.1814 less and in the second case Rs.5814 less per month compared to the correspondingly placed households in the urban sector despite comparable educational attainments. Finally

for the fourth stage, equation 3 is estimated separately for the hills and the plains<sup>†</sup>. We find that education is a key driver of income in both hills and plains. In the urban sector in both regions, higher education has a bigger impact than other forms of education. There are some differences between the two regions as well. We find that school education has insignificant impact on incomes in the plains while it shows a significant impact in the hills. In contrast, professional education is significant in the plains. Surprisingly, the rural-urban disparity in income from higher education is insignificant in the plains, but the same disparity for higher education is significant in the hills. Another interesting result is that the rural-urban disparity of income from sources other than labour power or education, which is captured by the intercept dummy for the rural sector, is found to be important in the plains but does not emerge in the hills. After controlling for education, raw labour is found to be an important source of income though relatively more powerful in the hills. Further, gender-based disparity is actually not observed in the hills though the sign of the coefficient is negative. It is significant in the plains. This is probably because the agriculture-based and female dominated economy of the hills makes little distinction between rewarding male and female-labour but gender disparity arises in the income generating sectors in the plains.

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<sup>†</sup> An F-test for the two sub-samples is conducted to see that the equations are statistically different though at 10 %.

**Table 4:- Sources of Inequality in Income opportunities: Regression results**

DEPENDENT=PCIN	Uttarakhand						Hills		Foothills-plains	
	1		2		3		3		3	
Equation No.	<u>Coeff</u>	<u>t-value</u>	<u>coeff</u>	<u>t-value</u>	<u>coeff</u>	<u>t-value</u>	<u>coeff</u>	<u>t-value</u>	<u>coeff</u>	<u>t-Value</u>
CONSTANT	-1797.0	-5.07	-1076.7	-3.86	-746.37	-2.49	-1829.7	-3.19	-172.9	-0.47
PCW	17.34	8.03	6.98	4.55	7.09	4.86	8.35	3.37	5.24	2.82
GEND RATIO	-0.003	-0.009	-0.57	-1.62	-0.46	-1.31	-0.006	-0.009	-0.76	-1.78
AVAGE	58.13	6.51	43.2	5.93	37.5	5.33	56.54	4.38	26.86	3.06
PCSC	--	--	3.44	3.04	4.2	2.1	9.24	2.74	2.92	1.24
PCHI	--	--	23.14	8.21	25.33	5.85	32.32	3.22	23.23	5.61
PCPROF	--	--	25.35	2.56	21.16	2.08	25.26	1.34	21.93	2.13
DUMRUR	--	--	--	--	-222.76	-2.08	49.72	0.25	-285.3	-2.25
Interaction with RURAL										
PCSC	--	--	--	--	-1.39	-0.61	-4.43	-1.16	-0.73	-0.26
PCHI	--	--	--	--	-9.37	-1.78	-21.35	-2.14	-5.57	-1.00
R <sup>2</sup> ( %)	9.0		27.7		31.0		37.98		27.8	
Durbin-Watson	1.77		1.9		1.98		2.16		1.9	

## **Concluding remarks**

This paper examines the inequalities in income opportunities in a hilly region. It is based on the Himalayan state of Uttarakhand, which represents diverse conditions, some of which are advantages while others are constraints. The majority of the districts are in hilly areas and present daunting challenges for both agriculture and industry. The districts of Uttarakhand, the hilly ones in particular, are also highly rural in population share and even the urban areas retain rural characteristics. The lack of opportunities for higher incomes makes these districts migration prone and women are usually left behind as workers in the hill economy. Secondary data reveal rural-urban differences in education at various stages and in average income levels. Conversely, there is also evidence of dissemination of education particularly at the school level in favour of rural areas and more important in remote and hilly habitations. This is in line with the nation's endeavors in recent decades to attain universal school education.

The econometric analysis finds that there is significant inequality in income opportunities between skilled and unskilled workers as education is a key driver of income and higher education in particular has a powerful role in increasing income levels. The inequality in income opportunities is also significant between the rural and the urban sectors, with the rural areas facing an adverse bias not only due to the differences in the people's education levels but additionally, because: (i) the returns from various levels of education themselves are relatively lower in the rural sector and (ii) also other residual sources not captured by the model work to widen the gap against the rural sector. The results also show that income is somewhat lower in a family that has a higher share of women in the working aged population. Since there is a lot of male migration in Uttarakhand, this gender-based disparity may hurt a number of households in this state. In general a higher share of dependency expectedly works against the household's welfare and the working aged members both in terms of their share and their length of experience help to make the household better off. Finally, the results also show that there are differences in the nature of the inequalities between the hilly areas and the plains.

Any policy to promote equality in income opportunity throughout Uttarakhand should be based on an understanding of the nature of the inequalities, which are very different in

different parts of the state. Thus, although education has an important income enhancing power, a rural urban disparity in returns to higher education is marked in the hills. On the other hand, the same disparity does not characterize the returns to school education in general but in the plains school education itself has limited benefit. Professional education is relevant only in the plains. Again, rural-urban disparity in income from sources not explained by education, labour, land and gender is apparent only in the plains. Women's share in the workforce brings down household income in the plains but the gender effect is not as apparent in the hills. Raw labour and experience are more important in the hills. Thus a policy package will have to look for the specific reason for income inequality in a certain area and work out the correct policy relevant for that area.

A policy implication that comes out of the exercise is the well-recognized need for the spread of education in rural and hilly areas. More specifically, our findings emphasize the importance of higher education, in which Uttarakhand is yet to focus attention in the hill areas. Education is particularly important because the present state of agriculture is not found to be income enhancing in the hills. Another point to note is that there is significant disparity in the returns to education between urban and rural areas. This is a matter of concern as it could only result in more out-migration, discouragement and above all injustice to rural people. This disparity, which is more conspicuous for higher education, could come from the lack of opportunities consistent with the education available in the villages and from the poor quality of education in these areas. The lower returns to higher education can be corrected by redesigning the education system in line with the region's economic prospects and by an integrated approach in planning development. This will also facilitate economic growth. At the regional level such disparities appear in the hills but the plains demand an emphasis on the spread of education. A focus on both urban and rural development merits attention.

## **Appendix-1**

### ***Rural and Urban sectors: Census definition***

There is no uniform definition of rural and urban areas in the world. The definition used here is as used in Census 2001. The rural urban demarcations are referred to alternatively as the two sectors. A place is designated as 'urban' if the following criteria are satisfied.

- (a) All places with a Municipal Corporation, Municipality, Cantonment Board or Notified Town Area Committee, etc.

- (b) All other places satisfying the following criteria:
- (i) A minimum population of 5000,
  - (ii) At least 75% of the male working population engaged in non-agricultural pursuits and
  - (iii) A density of population of at least 400 per sq. km.

**Primary data: Household characters**

**Table1A:- Sample mean value of some household variables**

	<b>Rural</b>	<b>Urban</b>
<b>Demography/Employment</b>		
Percentage of working age Male	31.1	33.3
Percentage of working age Female	29.57	29.18
Percentage of members Female	47.75	45.54
<b>Qualifications</b>		
Not educated <sup>(0)</sup>	51	43
School education <sup>(1)</sup>	41	40
Higher education general <sup>(2)</sup>	8	16
Higher education Professional <sup>(3)</sup>	0.3	2

Note:- <sup>(0)</sup> Percentage of members not schooled or schooled up to primary.

<sup>(1)</sup> Percentage of members with only school education

<sup>(2)</sup> Percentage of members with higher (beyond school) general education.

<sup>(3)</sup> Percentage of members with higher (beyond school) Professional education.  
beyond primary stage in household

PCHI= Percentage of members with higher (beyond school) general

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