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Rural Non-Farm Employment in Himachal Pradesh, 1971-2001 - A District Level Analysis

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I

INTRODUCTION

One of the essential features of the structural changes observed in the process of economic development of already developed economies has been the decline in the proportion of workforce engaged in agriculture (Kuznets, 1969). Inasmuch as economic growth and structural changes are believed to be strongly interrelated, the changes in the share of workforce employed in different sectors in developing countries have always been a subject of analysis. It is against this background that the increase in the proportion of workforce employed in India's rural non-farm sector during 1970s and 1980s had drawn the attention of both the scholars and policy makers.[1] These changes assumed significance, as they occured after the so-called 'changelessness' in the occupational structure during the fifties and the sixties; the proportion of workforce employed in agriculture was 72.1 per cent, 71.2 per cent and 72.1 per cent in 1951, 1961 and 1971, respectively (Vyas and Mathai, 1978).[2] A number of studies during the eighties and the nineties, beginning with Krishnamurthy's study (1984), have documented the incidence, patterns and determinants of rural non-farm employment (Vaidyanathan, 1986; Dev, 1990; Unni, 1991, 1998; Bhalla, 1993; Sen, 1996; Parthasarathy *et al.*, 1998).[3] Likewise, studies in the beginning of new millennium compared changes in the farm and non-farm employment in the post-reform period (1993-94 to 1999-2000) with those in the pre-reform period (1983 to 1993-94). These studies, *inter alia*, reported sharp deceleration in the rate of growth of employment, negative growth rates in some rural non-farm activities, increasing casualisation of the workforce, halting pace of rural workers' shift to non-agricultural sectors, declining quality of employment, and so on in the post-reform period compared to the pre-reform period (Chadha, 2001; Chadha and Sahu, 2002; Sundaram, 2001a,b). The dismal overall employment growth in the post-reform period gave rise to widely held perception of jobless growth. However, more recent studies analysing the trends and patterns in the distribution of workforce have reported significant reversals in the activity status between 1999-2000 and 2004-05. The overall employment during the period has increased at the rate of 2.81 per cent per annum dispelling the notion of jobless growth. There has also been a

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revival of growth in employment in agriculture, secondary and tertiary sectors which have recorded growth rates of 1.49 per cent, 5.81 per cent, and 3.92 per cent per annum, respectively (Sundaram, 2007; Bhalla, 2008 and Mitra, 2006). In brief, studies have shown that notwithstanding periodical set backs, the proportion of workers employed in India's rural non-farm sector has increased from 16.70 in 1977-78 to 27.30 in 2004-05.

Insofar as the determinants of rural non-farm employment are concerned, a number of hypotheses have been put forward and tested with the empirical data. Among these, three hypotheses are more popular. The first hypothesis attributes the growth in rural non-farm employment to inter-linkages between demand and supply emanating from a growing agriculture (Mellor, 1976). Second, residual sector hypothesis which envisages non-farm activities to absorb surplus labour force (Vaidyanathan, 1986). Third, inverted U time path hypothesis according to which the share of non-farm employment in total employment is the net result of the simultaneous operation of both the push and pull factors (Chandrasekhar, 1993).[4] In net terms, the growth of rural non-farm employment has been broadly attributed to two factors. First, those capturing agricultural development surrogated by variables like agricultural productivity per hectare and per capita growth of rural income. The growing commercialisation of agriculture contributes towards the growth of rural non-farm activities in more than one ways. For example, growing agriculture absorbs more labour in the use of modern inputs which are highly labour intensive. It also leads to the growth of agro-processing industries which further boosts the employment avenues. The level, composition and growth of rural non-farm employment depend upon three sources of demand for products and services of rural non-farm activities: (a) non-food goods and services which increase as income levels rise; (b) inputs and services to agriculture which increase with the acceleration rate of agricultural development; and (c) manufactured handicrafts goods stemming from external markets in other regions or abroad (Anderson and Leiserson, 1980, pp. 227-248). Second, factors related to distress conditions were surrogated by variables like person days of unemployment, extent and incidence of poverty, wage rates, incidence of landlessness, and so on. Vaidyanathan (1986) visualised the expansion of rural non-farm employment as contingent upon three main factors: (a) the level of rural demand for various non-agricultural goods and services produced locally; (b) the level of extra rural demand from urban areas, in the vicinity as well as from other regions, for produced goods and services of the rural sector; (c) location, scale and technology catering to these demands). In the literature, the empirical studies testing different hypotheses have reported that factors like commercialisation of agriculture, urbanisation, Gini ratio of operational holdings, per hectare agricultural output, government expenditure, education, formal vocational training, monthly per capita expenditure, ownership of land and infrastructure are the main determinants of rural non-farm employment (Dev, 1990, 2007; Unni, 1991; Hazell and Haggblade, 1991; Bhalla, 1993; Sen, 1996; Parthasarathy *et al.*, 1998; Lanjouw and Shariff, 2004).

A critical review of literature reveals that (i) most of the studies have analysed the trends and patterns in rural non-farm employment covering fifteen major states of India; smaller states like Himachal Pradesh are often not included in the analysis; (ii) not many detailed state/district level studies are available in the literature except perhaps by Eapen (1994 and 1995) for Kerala, Jayaraj (1994) for Tamil Nadu, Singh (1994) and Ranjan (2009) for Uttar Pradesh and Shukla (1994) for Maharashtra;[5] (iii) very few studies are based on household survey data from different agricultural regions at different levels of agricultural development (Lanjouw and Shariff, 2004, Bhaumik, 2007; Vatta and Garg, 2008); (iv) almost all studies while analysing the determinants of rural non-farm employment have considered it as one single homogenous entity. As is well known, rural non-farm employment encompasses a number of activities such as trade and commerce, transport and communication, construction, services, household industry, and so on which could be classified in terms of capital use, production relations, number of workers employed, etc. (Mukhopadhyay and Lim, 1985, cited in Unni, 1998). Therefore, the role of different factors in determining the quantum of employment in these activities may vary not only from region to region but from activity to activity as well. For example, high concentration of operational holdings in an agriculturally developed state like Punjab may impact rural non-farm employment significantly through more area under commercial crops and consequent generation of non-farm employment both through backward and forward linkages. However, the concentration of operational holdings may not cause sufficient demand for purchased inputs and may also not generate significant marketed surplus in a mountainous state like Himachal Pradesh where more than 80 per cent of the cultivated area is without irrigation. In a similar vein, where rural hinterland is not near to urban centres and transportation system is not yet fully developed, there may be very little or even negative impact of urbanisation on rural non-farm employment. Also, while literacy may not have much impact on the household industries and construction activities, it is expected to affect the service sector more strongly. In brief, the different factors may be important in determining the incidence of rural non-farm employment in different regions/states/districts and also in different activities. And from policy point of view, it is worthwhile to find out the factors that affect the extent of rural non-farm employment at a more disaggregated level in a particular region/state/district and also in a particular activity.[6]

Against this background, the present study is undertaken to analyse the incidence, pattern and the role of various factors in determining rural non-farm employment in different activities at the district level in the state of Himachal Pradesh. In more concrete terms, the study has two objectives: (i) to examine the temporal changes in the extent, structure and growth of rural non-farm employment in different activities across districts between 1971 and 2001; and (ii) to quantify the contribution of important factors in determining rural non-farm employment in different non-farm activities. The study uses data from population census and is organised in four

sections. Section II describes the nature of data and its temporal comparability. The district wise extent, structure and growth in rural workers employed in different non-farm activities have been delineated in Section III. Section IV analyses the determinants of rural non-farm employment in different activities. The main findings of the study are summarised in Section V.

II

DATA: CONCEPTS, DEFINITIONS AND COMPARABILITY

The quinquennial National Sample Surveys on Employment and Unemployment and the decennial Population Census are the two major sources of data to study the temporal changes in the employment structure. Among these two sources, the data from National Sample Surveys is based on a more scientific methodology and is temporally comparable as well (Chadha and Sahu, 2002). However, since published NSS data are not available beyond state level, the district level analysis is only possible using census data. The present study is, therefore, based on census data. The definitions and concepts used in different censuses and their implications for comparability of data have been widely discussed and commented upon (Unni, 1989; Krishnamurthy, 1984; Sinha, 1982). Nonetheless, a few remarks about changes in the definitions and concepts used in different census and their ramifications for the comparability of data are in order.

The definition of work remained unchanged in all the four census. It was defined as participation in any economically productive activity both physical and mental. It involves not only actual work but also effective supervision and direction of work. Regarding the reference period, the 1971 census adopted dual reference period. It was one week prior to the date of enumeration in the case of regular work in trade, profession, service or business, while in the case of work that are not carried out throughout the year such as cultivation, livestock keeping, plantation, the reference period was last one year. In the latter census, the reference period for all kinds of work was changed to one year. This change in the reference period might have led to the enumeration of a large number of workers who may not have been working during the reference period of one week. Again, while 1971 census identified the industry of the worker on the basis of his main activity, the subsequent census used the criterion of major time spent. For example, a person who has worked for more than 183 days in a year was considered as the main worker whereas one who has worked for less than six months or worked at least one day during the last one year before enumeration was considered as marginal worker. However, in 1971 the persons classified as non-workers were asked whether they were engaged in any productive activity as secondary work. Thus the main and secondary workers of 1971 may be comparable to main and marginal workers of 1981, 1991 and 2001 censuses. Some scholars have, however, pointed out that recording of secondary workers was not done seriously in the 1971 census leading to underestimation of such workers

(Seal, 1981, cited in Unni, 1989). It is also argued that comparability of the workforce employed in different rural non-farm activities is not much affected inasmuch as marginal workers are likely to be predominant in agricultural sector (Sinha, 1982). The results of the analysis of the data have, therefore, to be interpreted in the light of the above problems of comparability.

Besides changes in the concepts and definitions, the comparability of data for different districts of the state was also seriously jeopardised because of re-organisation of the districts in 1972. For example, two new districts, namely, Hamirpur and Una were carved out from the erstwhile Kangra district. Also, Mahasu and Shimla districts were re-organised. Consequently, while Hamirpur and Una did not exist in 1971, the data for Kangra and Shimla from 1981 census were not comparable with that of 1971. Thus, in order to ensure comparability, the data for two new districts for the year 1971 were separated from district Kangra keeping in view the number of tehsils, sub-tehsils and villages transferred from the erstwhile Kangra district to these two new districts. Similar adjustments were also made for erstwhile Shimla and Mahasu districts. In this way, the data for all twelve districts were created for the year 1971 and were made comparable with data thrown up by 1981 census.

III

STRUCTURE AND EXTENT OF RURAL NON-FARM EMPLOYMENT

The temporal changes in the proportion of rural persons and males employed in non-farm sector, thrown up by NSS data, both for the state of Himachal Pradesh and all-India have been given in Table 1. The table shows that the proportion of persons employed in rural non-farm sector in the state increased continuously from 12.20 per cent in 1977-78 to 30.40 per cent in 2004-05 and remained significantly higher compared to the all-India average. Similarly, the proportion of rural males employed in non-farm sector increased from 18.90 per cent in 1972-73 to 44.74 per cent in

TABLE 1. TRENDS IN THE PER CENT SHARE OF RURAL NON-FARM EMPLOYMENT; 1972-73 TO 2004-05

	Male		Persons	
Year	Himachal Pradesh	All India	Himachal Pradesh	All India
(1)	(2)	(3)	(4)	(5)
1972-73	18.90	19.30	-	-
1977-78	22.60	19.50	12.20	16.70
1983	22.90	22.40	12.90	18.60
1987-88	31.30	25.50	18.00	27.80
1993-94	34.20	25.96	19.70	21.60
1999-2000	44.74	28.20	26.40	23.70
2004-05	-	32.90	30.40	27.30

Source: Parthasarathy *et al.*, 1998, pp. 145-146; Sundaram, 2007, p. 3125 and Dev, 2007, p. 409.

1999-2000. Table 2 gives the annual compound growth rates of workers employed in different activities during the pre-reform (1983 to 1993-94) and post-reform periods (1993-94 to 1999-2000). The table throws up a mixed picture. For example, while there was a deceleration in growth rates of employment during the post-reform period compared to the pre-reform period in four activities, namely, utilities, construction, trade and community, social and personal services, in three others, namely, manufacturing, transportation, storage and communication and finance, insurance and real estate, the growth rates in employment were higher in the post-reform period compared to the pre-reform period. Further, while employment in agriculture recorded negative growth rate, the rate of decrease further got accelerated in mining and quarrying. At the all-India level, the employment in all activities increased at lower rates during the post-reform period compared with post-reform period with the notable exception of construction where the rate of growth was higher in the former compared to the latter period.

TABLE 2. ANNUAL COMPOUND GROWTH RATE OF RURAL EMPLOYMENT FOR USUAL STATUS (PRINCIPAL + SUBSIDIARY) WORKERS IN HIMACHAL PRADESH: 1983/1999-2000

(*per cent /annum)*

	Himachal Pradesh		All-India	
Sectors	1983/1993-94	1993-94/1999-2000	1983/1993-94	1993-94/1999-2000
(1)	(2)	(3)	(4)	(5)
Agriculture	1.85	-1.39	1.38	0.18
Mining and quarrying	-3.45	-31.02	3.84	-2.28
Manufacturing	3.23	4.40	2.14	1.78
Utilities	13.02	4.54	4.70	-5.65
Construction	10.10	4.98	5.18	6.43
Trade	14.47	-0.35	3.72	1.18
Transport, storage and communication	6.64	17.35	4.58	7.29
Finance, insurance and real estate	3.53	14.56	5.99	2.51
Community, social and personal services	5.24	2.00	3.13	0.32
Non-agriculture	7.30	4.15	3.23	2.31
All-sectors	2.72	-0.13	1.75	0.66

Source: Chadha and Sahu, 2002, p. 2017.

As alluded to above, since the published NSS data are not available beyond state level, the trends in the rural non-farm employment at the district level have been studied using census data. The changes in the proportion of male and female workers employed in different rural non-farm activities across districts between 1971 and 2001 are brought out in Table 3 and Table 4, respectively. Table 3 shows that the proportion of male workers depending on agriculture decreased continuously in all the districts of the state with the notable exception of Kinnaur where it increased marginally. Naturally, therefore, the proportion of workers employed in non-farm activities registered a significant increase. And among different non-farm activities,

TABLE 3. DISTRIBUTION OF MALE WORKERS BY INDUSTRIAL CATEGORIES; 1971- 2001

(per cent)

Activities/Districts (1)	Years (2)	BLP (3)	CBA (4)	HMR (5)	KGR (6)	KNR (7)	KUL (8)	L&S (9)	MND (10)	SHM (11)	SMR (12)	SLN (13)	UNA (14)	HP (15)
1. Agriculture and allied	1971	74.2	86.8	63.4	61.6	57.0	83.6	41.5	75.95	76.7	75.6	69.9	64.0	72.08
	1981	72.3	73.0	64.5	57.3	52.9	82.8	39.6	75.06	72.4	75.9	70.0	65.2	68.81
	1991	64.8	71.7	50.9	51.1	44.6	78.8	43.1	70.25	69.5	72.6	57.9	55.4	62.77
	2001	49.17	56.62	36.85	36.81	46.42	70.35	37.86	54.29	62.71	64.32	44.93	42.42	51.21
2. Agricultural labour	1971	2.93	2.06	5.46	5.62	2.93	3.17	1.18	1.71	5.25	6.05	4.98	9.32	4.48
	1981	1.61	0.7	2.53	5.62	3.7	2.09	1.68	1.05	4.4	2.61	3.07	6.71	3.3
	1991	1.69	1.12	2.49	6.78	4.96	2.71	3.6	1.71	4.99	4.16	2.37	8.74	4.07
	2001	1.15	0.55	0.64	3.75	2.54	2.13	1.03	0.59	2.94	1.91	2.69	3.85	2.23
3. Mining and quarrying	1971	0.04	0.04	0.02	0.56	-	0.01	-	0.08	0.01	0.05	0.23	-	0.15
	1981	0.09	0.23	0.03	1.03	0.03	0.11	-	0.15	0.04	0.34	0.34	0.03	0.33
	1991	0.13	0.28	0.11	0.65	0.07	0.03		0.16	0.05	1.45	0.25	0.05	0.35
	2001	0.19	0.01	0.29	0.63	0.04	0.08	0.00	0.34	0.02	1.82	0.43	0.10	0.42
4. Manufacturing														
(a) Household industries	1971	3.44	1.16	5.17	4.73	6.11	1.7	0.92	3.23	1.89	3.13	3.78	3.71	3.26
	1981	2.97	1.21	4.15	2.85	3.61	1.08	0.3	2.38	1.15	2.13	2.36	2.79	2.26
	1991	1.73	1.33	2.54	2.51	3.57	0.99	0.72	1.65	0.73	1.33	1.52	2.34	1.75
	2001	1.97	0.90	2.66	3.61	1.90	1.30	0.43	2.64	1.45	1.87	1.27	2.07	2.15
(b) Other than household industries	1971	1.56	0.72	1.7	1.53	0.8	0.76	0.41	1.03	1.16	1.26	2.37	3.02	1.38
	1981	3.87	1.81	4.27	5.75	2.27	1.74	0.91	2.4	2.31	3.16	5.44	5.82	3.67
	1991	4.31	1.44	4.00	4.3	2.08	1.51	0.67	2.26	1.52	5.67	14.2	6.79	4.24
	2001	5.81	2.19	6.62	6.54	1.16	1.94	0.43	3.21	1.51	8.54	11.40	9.60	5.36
5. Construction	1971	3.22	1.48	2.25	4.69	8.05	1.73	27.3	6.67	2.12	6.77	4.24	2.36	4.2
	1981	4.87	13.8	4.78	6.22	9.86	2.46	36.4	6.00	4.55	6.6	4.16	3.67	6.39
	1991	5.78	9.73	6.6	5.72	15.4	2.91	16.1	5.32	6.16	4.01	5.51	4.25	5.94
	2001	6.86	4.16	12.53	8.55	5.63	3.96	13.17	5.93	4.07	4.06	7.31	7.45	6.48
6. Trade and commerce	1971	1.88	1.3	3.13	3.05	1.98	1.58	1.83	1.81	2.35	1.43	2.26	2.38	2.17
	1981	2.86	2.16	4.99	5.55	2.39	2.05	2.03	2.8	2.54	2.09	2.78	3.46	2.32
	1991	3.78	2.83	6.1	5.91	3.36	2.52	2.73	3.29	3.09	2.51	3.99	5.07	4.03
	2001	6.13	7.14	9.71	9.67	4.73	4.19	1.29	5.29	3.36	2.59	6.41	9.89	6.10

(Contd.)

TABLE 3 *(CONCLD.)*

Activities/Districts (1)	Years (2)	BLP (3)	CBA (4)	HMR (5)	KGR (6)	KNR (7)	KUL (8)	L&S (9)	MND (10)	SHM (11)	SMR (12)	SLN (13)	UNA (14)	HP (15)
7. Transport and Communication	1971	1.21	0.39	1.27	1.99	0.85	0.69	2.52	0.77	0.9	0.49	2.06	1.08	1.13
	1981	1.71	1.21	2.87	3.06	1.37	0.82	1.08	1.44	1.71	0.99	2.25	2.09	1.9
	1991	2.44	1.12	3.5	2.98	1.26	0.98	1.78	2.1	1.56	1.25	2.88	2.59	2.17
	2001	5.08	1.67	6.17	4.76	0.84	1.72	1.24	3.05	1.30	1.93	5.68	4.52	3.40
8. Other services	1971	11.5	6.08	17.6	16.2	22.3	6.76	24.3	8.75	9.62	5.24	10.2	14.2	11.15
	1981	9.72	5.88	11.9	12.6	23.9	6.85	18	8.72	10.9	6.2	9.57	10.2	10.02
	1991	15.4	10.4	23.8	20.1	24.7	9.58	31.3	13.26	12.4	6.98	11.4	14.7	14.68
	2001	23.64	26.77	24.52	25.69	36.74	14.33	44.55	24.65	22.66	12.96	19.88	20.09	22.65
Agricultural activities	1971	77.1	88.8	68.9	67.2	59.9	86.8	42.7	77.66	82.0	81.6	74.9	73.3	76.56
	1981	73.9	73.7	67.0	63.0	56.6	84.9	41.2	76.11	76.8	78.5	73.1	71.9	72.11
	1991	66.5	72.9	53.4	57.9	49.5	81.5	46.7	71.96	74.5	76.8	60.2	64.2	66.84
	2001	50.32	57.17	37.49	40.56	48.96	72.48	38.89	54.89	65.65	66.24	47.62	46.27	53.44
Non -agricultural activities	1971	22.9	11.2	31.1	32.8	40.1	13.2	57.3	22.34	18.1	18.4	25.1	26.7	23.44
	1981	26.1	26.3	33.0	37.0	43.4	15.1	58.8	23.89	23.2	21.5	26.9	28.1	27.89
	1991	33.5	27.2	46.6	42.1	50.5	18.5	53.3	28.03	25.5	23.2	39.8	35.8	33.16
	2001	49.68	42.83	62.51	59.44	51.04	27.52	61.11	45.11	34.35	33.76	52.38	53.73	46.56

Sources: 1. Census of India 1971, Series 7 , Himachal Pradesh , Part – II-B , Economic Tables.
2. Census of India 1981, Series 7, Himachal Pradesh , Part – II-B, Primary Census Abstract.
3. Census of India 1991, Series 9 , Himachal Pradesh, Part – II – B, Primary Census Abstract.
4. Census of India 2001, Economic Tables (Electronic Data).

Note: BLP= Bilaspur; CBA = Chamba; HMR = Hamirpur; KGR = Kangra; KNR = Kinnaur; KUL = Kullu; L & S = Lahaul and Spiti; MND = Mandi; SHM = Shimla; SMR = Sirmaur; SLN = Solan; UNA = Una and H. P. = Himachal Pradesh.

TABLE 4. DISTRIBUTION OF FEMALE WORKERS BY INDUSTRIAL CATEGORIES; 1971-2001

(per cent)

Activities/Districts (1)	Years (2)	BLP (3)	CBA (4)	HMR (5)	KGR (6)	KNR (7)	KUL (8)	L&S (9)	MND (10)	SHM (11)	SMR (12)	SLN (13)	UNA (14)	HP (15)
1. Agriculture and allied	1971	94.4	95.7	91.4	80.4	86.1	93.9	80.0	94.99	95.9	95.9	92.3	78.7	92.12
	1981	96.1	93.4	95.0	83.6	84.9	96.2	73.1	97.21	95.4	95.3	91.8	76.8	93.2
	1991	94.7	89.1	94.4	82.2	83.7	94.5	78.2	94.9	93.9	94.0	87.6	79.7	91.34
	2001	91.59	87.21	90.51	77.31	85.27	91.26	80.98	89.36	89.39	92.67	78.81	76.98	86.97
2. Agricultural labour	1971	3.3	1.75	6.05	9.78	9.53	2.84	2.72	2.71	2.38	6.31	2.46	9.6	4.14
	1981	1.13	0.47	1.08	3.85	7.7	1.33	3.56	0.57	1.8	0.96	1.33	3.62	1.74
	1991	0.53	1.26	0.74	3.55	5.46	1.53	7.98	1.13	2.41	1.96	1.59	4.23	2.03
	2001	0.70	0.57	0.53	2.98	1.42	1.65	0.94	0.52	2.36	1.19	2.44	2.41	1.60
3. Mining and quarrying	1971	-		-	0.06	-	-	-	-	-	-	0.02	-	0.01
	1981	-	0.02	-	0.03	-	0.01	-	0.01	-	-	0.02	-	0.01
	1991	0.01	0.07	-	0.02	0.01	0.03	-	0.01	0.01	0.02	-	0.01	0.01
	2001	0.40	0.00	0.04	0.02	0.00	0.01	0.00	0.02	0.00	0.02	0.05	0.00	0.02
4. Manufacturing														
(a) Household industries	1971	1.14	0.7	1.00	2.79	1.35	0.37	0.15	0.93	0.22	0.65	1.03	2.5	0.92
	1981	0.67	0.6	0.63	2.32	0.47	0.31	0.11	0.46	0.19	0.51	0.64	4.06	0.69
	1991	0.56	0.79	0.58	1.91	1.24	0.55	0.85	0.53	0.11	0.24	0.65	1.86	0.7
	2001	0.41	1.17	0.60	1.95	1.29	0.94	1.06	0.99	0.77	0.48	0.62	1.54	0.99
(b) Other than household industries	1971	0.24	0.12	0.1	0.41	0.1	0.07	0.32	0.13	0.13	1.39	0.27	1.3	0.25
	1981	0.4	0.83	0.31	1.96	0.36	0.36	0.26	0.25	0.2	0.79	1.8	2.43	0.65
	1991	0.44	0.36	0.2	1.42	0.43	0.58	0.6	0.33	0.15	0.81	3.97	2.32	0.77
	2001	0.59	0.35	0.53	2.00	0.36	0.56	0.07	0.44	0.10	0.77	3.84	3.94	0.98
5. Construction	1971	0.02	0.08	0.01	0.29	1.45	1.18	13.5	0.07	0.18	0.95	0.89	0.26	0.61
	1981	0.11	1.4	0.26	1.17	3.29	0.54	19.5	0.15	0.71	0.68	0.99	1.43	1.05
	1991	0.15	1.44	0.29	0.61	3.98	0.44	5.44	0.14	0.63	0.09	0.7	0.42	0.58
	2001	0.31	0.26	0.76	1.18	1.59	0.77	5.46	0.51	0.40	0.07	2.09	0.76	0.75
6. Trade and commerce	1971	0.08	0.06	0.03	0.13	0.05	0.21	0.51	0.13	0.1	0.14	0.13	0.14	0.12
	1981	0.13	0.12	0.13	0.3	0.12	0.19	0.22	0.09	0.15	0.23	0.27	0.26	0.17
	1991	0.23	0.47	0.26	0.55	0.21	0.4	0.75	0.17	0.18	0.23	0.64	0.38	0.31
	2001	0.52	0.45	0.53	0.89	1.16	0.75	0.92	0.59	0.50	0.38	1.11	0.66	0.65

(Contd.)

TABLE 4 *(CONCLD.)*

Activities/Districts (1)	Years (2)	BLP (3)	CBA (4)	HMR (5)	KGR (6)	KNR (7)	KUL (8)	L&S (9)	MND (10)	SHM (11)	SMR (12)	SLN (13)	UNA (14)	HP (15)
7. Transport and communication	1971	0.07	0.03	0.05	0.23	-	0.1	0.25	0.06	0.02	0.05	0.06	0.05	0.07
	1981	0.03	0.09	0.05	0.18	0.11	0.08	0.04	0.02	0.09	0.03	0.13	0.13	0.08
	1991	0.07	0.08	0.06	0.2	0.05	0.03	0.07	0.04	0.07	0.03	0.09	0.22	0.08
	2001	0.12	0.11	0.10	0.21	0.03	0.07	0.07	0.09	0.03	0.04	0.24	0.21	0.11
8. Other services	1971	0.72	1.57	1.38	5.87	1.45	1.36	2.49	0.98	1.03	1.48	2.81	7.41	1.76
	1981	1.48	3.03	2.54	6.61	3.07	0.99	3.2	1.24	1.46	1.55	2.99	11.3	2.41
	1991	3.35	6.43	3.46	9.5	4.93	1.98	6.08	2.7	2.56	2.59	4.78	10.9	4.19
	2001	5.73	9.87	6.41	13.46	8.87	4.01	10.49	7.47	6.44	4.39	10.80	13.51	7.94
Agricultural activities	1971	97.7	97.4	97.4	90.2	95.6	96.7	82.8	97.7	98.3	95.3	94.8	88.3	96.26
	1981	97.2	93.9	96.1	87.4	92.6	97.5	76.7	97.78	97.2	96.2	93.2	80.4	94.94
	1991	95.2	90.4	95.2	85.8	89.2	96	86.2	96.08	96.3	96.0	89.2	83.9	93.37
	2001	92.29	87.79	91.04	80.29	86.69	92.91	81.92	89.88	91.76	93.85	81.25	79.39	88.57
Non-agricultural activities	1971	2.27	2.56	2.57	9.78	4.4	3.3	17.3	2.3	1.68	4.66	5.21	11.7	3.74
	1981	2.82	6.09	3.92	12.6	7.42	2.5	23.3	2.22	2.8	3.79	6.84	19.6	5.06
	1991	4.81	9.64	4.85	14.21	10.90	3.98	13.79	3.92	3.71	4.01	10.83	16.10	6.63
	2001	7.71	12.21	8.96	19.71	13.31	7.09	18.08	10.12	8.24	6.15	18.75	20.61	11.43

Sources: 1. Census of India 1971, Series 7 , Himachal Pradesh , Part – II-B , Economic Tables.
2. Census of India 1981, Series 7, Himachal Pradesh , Part – II-B, Primary Census Abstract.
3. Census of India 1991, Series 9 , Himachal Pradesh, Part – II – B, Primary Census Abstract.
4. Census of India 2001, Economic Tables (Electronic Data).

Note: BLP= Bilaspur; CBA = Chamba; HMR = Hamirpur; KGR = Kangra; KNR = Kinnaur; KUL = Kullu; L & S = Lahaul and Spiti; MND = Mandi; SHM =Shimla; SMR = Sirmaur; SLN = Solan; UNA = Una and H. P. = Himachal Pradesh.

while the proportion of male workers employed in household industries declined practically in all the districts, the proportion of those employed in other than household industries increased in most of the districts except Kinnaur, Lahaul and Spiti and Solan where it declined and Shimla where it remained nearly constant. Insofar as the proportion of male workers employed in construction activities was concerned, it increased continuously in half of the districts (Bilaspur, Hamirpur, Kangra, Kullu, Solan and Una), remained unchanged in Mandi and Sirmaur and decreased significantly in Chamba, Kinnaur and Lahaul and Spiti districts. Likewise, the proportion of such workers employed in trade and commerce and transport and communication also increased continuously across districts with the notable exceptions of Lahaul and Spiti in case of the former and Kinnaur, Lahaul and Spiti and Shimla in respect of the latter activity. Further, though there was a consistent increase in the proportion of workers employed in other services in almost all the districts over the period, the increase was much more pronounced during the nineties.[7]

Consistent with the overall pattern, the proportion of female workers employed in agriculture and allied activities also registered a persistent decrease across districts barring two, namely, Kinnaur and Lahaul and Spiti where such proportions increased (Table 4). However, despite these trends, while more than 90 per cent of female workers continued to earn their livelihood from agriculture in four districts (Bilaspur, Hamirpur, Kullu, and Sirmaur), the proportion of such workers depending on agriculture varied from around 80 to 90 per cent in the remaining districts. This pattern is consistent with the characteristic feature of the mountainous states where males generally migrate to earn livelihood in other states/areas leaving behind females to take care of agriculture and household chores. Among different non-farm activities, the proportion of female workers employed in other services registered a continuous increase over the time period across all districts. It, however, needs to be mentioned that, like their male counterparts, most of the increase in female employment in other services accrued during the nineties as compared to the seventies and the eighties. Further, the proportion of these workers employed in other non-farm activities like household industries, other than household industries, construction, trade and commerce and transport and communication was insignificant (less than one per cent) and did not exhibit any consistent pattern over the period and across districts. In brief, the districts which had a higher proportion of male workforce employed in rural non-farm activities also had a higher female workforce employed in these activities. The notable exception was district Hamirpur where a very high male employment in non-farm activities was associated with very low proportion of female workers employed in such activities.

The growth of rural non-farm activities in terms of workforce employed in different activities can be gauged by computing compound growth rates. Therefore, these have been computed separately for male and female workers for three different periods, i. e., 1971-81, 1981-91 and 1991-2001. The growth rates in employment of

male workers in different activities are presented in Table 5. The table shows that employment of these workers in agriculture registered negative growth rates during the nineties in as many as nine districts (Bilaspur, Chamba, Hamirpur, Kangra, Lahaul and Spiti, Mandi, Sirmaur, Solan and Una); in others (Kinnaur, Kullu and Shimla) growth rates of employment in agriculture were positive, though very small. The rates of increase in employment as agricultural labour were, however, negative in most of the districts with the notable exception of Solan. Regarding employment in rural non-farm activities as a whole, the table shows that the growth rates were higher during the nineties compared to the eighties in seven districts, namely, Chamba, Hamirpur, Kullu, Lahaul and Spiti, Mandi, Shimla and Sirmaur and lower in Bilaspur, Kinnaur, Kangra, Solan and Una. Among individual non-farm activities, the employment in construction activities registered higher rates of increase during the nineties in comparison to the earlier periods in half of the districts (Hamirpur, Kangra, Kullu, Mandi, Sirmaur and Una) whereas in the remaining districts (Bilaspur, Chamba, Kinnaur, Lahaul and Spiti, Shimla and Solan), the per cent rates of increase were lower compared to the eighties. Likewise, the rates of growth of employment in transport and communication during the nineties accelerated in eight districts (Bilaspur, Chamba, Hamirpur, Kangra, Kullu, Sirmaur, Solan and Una), decelerated in Mandi and turned negative in Kinnaur, Lahaul and Spiti and Shimla. Almost similar pattern was discernible in respect of growth rates of employment in trade and commerce. For example, these increased by varying degree during the nineties in Bilaspur, Chamba, Hamirpur, Kangra, Kullu, Mandi, Solan and Una, decreased in Kinnaur, Shimla and Sirmaur and became negative in Lahaul and Spiti. Further, while the growth rates of employment of male workers in other services during the nineties were significantly higher in six districts (Chamba, Kinnaur, Kullu, Shimla, Sirmaur and Solan) compared to the eighties, reverse pattern was noted in six others (Bilaspur, Hamirpur, Kangra, Lahaul and Spiti, Mandi and Una).

The annual compound growth rates of employment of female workers in different activities have been brought out in Table 6. As may be seen from the table, the growth rates of employment of female workers in agriculture and allied activities were higher during the nineties compared to the eighties in Bilaspur, Chamba, Kinnaur, Kullu, Lahaul and Spiti, Mandi and Una and lower in Hamirpur, Kangra, Shimla, Sirmaur and Solan. Similarly, the growth rates of these workers employed as agricultural labourers accelerated in Bilaspur, Kullu, Lahaul and Spiti and Solan, decelerated in Kangra, Shimla and Una and turned negative in Chamba, Hamirpur, Kinnaur, Mandi and Sirmaur. In so far as the growth rates of employment in all non-farm activities together were concerned, these increased at a significantly higher rate during the nineties compared to the eighties in ten out of twelve districts (Bilaspur, Hamirpur, Kangra, Kinnaur, Kullu, Lahaul and Spiti, Shimla, Sirmaur, Solan and Una) but the rates of growth were marginally lower in Chamba and Mandi districts. The per cent rates of increase in employment of female workers in construction activities were also very high during the nineties compared to the eighties in Bilaspur,

TABLE 5. ANNUAL COMPOUND GROWTH RATE OF MALE WORKERS BY INDUSTRIAL CATEGORIES; 1971-2001

(per cent/per annum)

	Bilaspur			Chamba			Hamirpur			Kangra			Kinnaur			Kullu			Lahual and Spiti		
Activities/Districts	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1. Agricultural and allied	1.29	0.7	-2.83	-0.5	1.3	-3.15	0.31	-0.1	-3.32	1.1	0.6	-4.08	0.4	-0.2	1.44	1.3	1.4	0.35	2.7	-0.1	-0.69
2. Agricultural labour	-4.3	2.3	-3.93	-9.0	6.4	-7.65	-7.3	6.9	-12.85	1.8	3.7	-6.58	3.6	4.5	-5.50	-2.8	4.6	-0.92	6.9	6.9	-11.21
3. Mining and quarrying	10.8	4.9	4.01	20	3.4	-27.94	6.5	-	10.32	8.1	-2.9	-1.23	-	11.6	-3.97	37	-10.2	11.30	-	-	-100.00
4. Manufacturing																					
(a) Household industries	0.1	-3.5	1.18	1.7	2.4	-4.67	-2.0	8.2	0.30	-3.2	0.5	2.78	-4.0	1.3	-5.15	-3.2	0.9	4.28	-7.8	8.2	-4.47
(b) Other than household industries	11.2	2.9	2.93	11	-0.9	3.43	9.8	-3.9	5.00	16.2	-1.2	3.36	12.4	0.6	-4.73	10.2	0.4	4.08	11.7	-3.9	-3.71
5. Construction	5.8	3.6	1.61	27	-2.1	-8.91	7.9	-8.7	6.45	4.7	0.9	3.17	3.3	6.1	-8.64	5.0	3.6	4.67	6.2	-8.7	-1.35
6. Trade and Commerce	5.9	4.7	4.86	6.6	4.2	8.78	4.9	2.1	4.59	8.1	2.4	4.11	3.1	5.0	4.56	4.0	4.0	6.79	4.3	2.1	-6.67
7. Transport.and Comm.	5.1	5.5	7.50	14	0.8	3.09	8.7	4.1	5.68	6.3	1.5	3.87	6.1	0.6	-2.97	3.1	3.7	7.36	-5.2	4.1	-2.92
8. Other Services	-0.2	6.6	4.29	1.0	7.4	8.97	-3.7	4.8	0.15	-0.8	6.6	1.60	1.9	1.8	5.11	1.5	5.4	5.67	0.1	4.7	4.23
Agricultural activities	1.1	0.7	-2.85	-1.0	1.3	-3.21	-0.1	0.3	-3.62	1.1	0.9	-4.35	0.6	0.2	0.91	1.1	1.5	0.31	2.8	0.3	-1.21
Non-agricultural activities	2.9	4.4	3.90	10.0	1.8	3.79	0.7	-1.9	2.81	3.0	3.1	2.59	2.0	3.0	1.15	2.7	3.9	5.59	3.4	-1.9	2.01

	Mandi			Shimla			Sirmaur			Solan		Una				Himachal Pradesh		
Activities/District	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
(1)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
1. Agricultural and allied	1.5	0.9	-3.04	0.5	0.3	0.09	1.3	0.6	-0.38	3.5	0.7	-2.02	1.2	0.9	-2.75	1.1	0.7	-2.01
2. Agricultural labour	-3.1	6.7	-10.51	-1	2	-4.09	-6.9	5.9	-6.69	-1.4	0.1	1.74	-2.2	5.4	-7.97	-1.7	3.8	-5.83
3. Mining and quarrying	8.9	2.3	7.22	14.0	4.2	-7.44	23.6	16.9	3.14	7.9	-0.7	6.27	36.2	7.2	6.16	9.8	2.2	1.68
4. Manufacturing																		
(a) Household industries	-1.4	-2.0	4.24	-4.0	-3.8	8.28	-2.6	-3.5	4.28	-1.2	-1.8	-1.26	-9.8	0.8	-1.35	-2.2	-0.8	2.06
(b) Other than household industries	10.6	1.0	3.03	8.4	-3.4	1.00	11.0	7.1	5.05	12.5	13.0	-1.69	7.9	4.2	3.42	11.8	3.2	2.37
5. Construction	0.6	0.4	0.59	9.1	3.8	-2.98	1.0	-3.8	0.96	3.3	5.6	3.37	5.6	4.2	5.66	5.8	0.9	0.89
6. Trade and Commerce	6.2	3.3	4.34	1.9	2.7	2.00	5.2	2.9	1.16	5.7	6.4	5.38	4.8	6.6	6.80	5.8	3.7	4.23
7. Transport and Communication	8.2	5.6	3.29	7.9	-0.2	-0.75	8.6	3.5	5.28	4.4	5.2	7.56	7.9	4.9	5.61	6.8	3.1	4.58
8. Other services	1.6	5.9	5.86	2.4	2.0	7.38	2.9	2.3	7.28	2.9	4.5	6.21	-2.2	6.4	3.03	0.3	5.6	4.44
Agricultural activities	1.5	1.1	-3.17	0.5	0.4	-0.15	0.8	0.8	-0.64	3.3	0.7	-1.84	0.8	1.5	-3.33	0.8	0.9	-2.21
Non-agricultural activities	2.4	3.3	4.34	3.7	1.7	4.17	2.9	1.8	4.69	4.2	6.7	3.30	1.5	5.2	4.02	3.2	3.5	3.45

Note: I = 1971-1981; II = 1981-1991; III = 1991-2001.

TABLE 6. ANNUAL COMPOUND GROWTH RATES OF FEMALE WORKERS BY INDUSTRIAL CATEGORIES; 1971-2001

(per cent /per annum)

	Bilaspur			Chamba			Hamirpur			Kangra			Kinnaur			Kullu			Lahual and Spiti		
Activities/Districts	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1. Agriculture and allied	-3.0	0.2	5.24	-2.0	-1.1	2.96	-4.2	4.8	2.88	3.9	3.4	3.18	0.03	-1.7	3.30	1.2	1.3	3.73	-0.2	-0.8	1.98
2. Agricultural labour	-13.0	-7.0	8.53	-14.0	12.0	-4.58	-20.0	1.0	-0.11	-5.7	2.7	2.01	-1.9	-4.9	-9.87	-6.3	2.9	4.90	3.5	6.8	17.98
3. Mining and quarry	-	-	22.32	15.0	15.0	-100.0	-	-	-	-	-	6.16	-	-	100.0	20.6	-17.1	9.60	-	-	-
Manufacturing																					
(a) Household industries	-8.1	-1.5	2.34	-4.0	4.6	7.27	-8.9	3.9	3.61	1.7	1.5	4.03	-9.8	8.3	3.52	0.7	7.5	9.73	-2.2	20.4	3.93
(b) Other than household industries	1.8	1.4	8.69	19	-6.6	2.98	6.7	0.7	13.70	21.2	0.3	7.46	13.7	0.2	1.37	18.2	6.5	3.71	-1.5	7.2	-17.91
5. Construction	17.5	3.4	13.11	30.0	1.9	-13.19	34.2	6.2	13.68	19.2	-2.9	10.90	8.7	0.3	-5.95	-6.6	-0.5	10.05	4.5	-13.3	1.68
6. Trade and Commerce	1.9	6.2	14.48	5.5	16.0	2.72	8.8	12.9	10.71	12.6	10.1	8.93	10.3	3.7	22.50	-0.3	9.3	10.99	-7.5	11.6	3.75
7. Transport and Communication	-13.0	11.6	-25.18	7.8	1.1	-27.04	-5.7	7.7	-24.39	0.7	4.9	13.59	3.1	-8.7	-39.94	-1.6	-7.4	-25.18	-15.4	2.9	-39.94
8. Other services	3.9	8.9	11.40	4.4	9.5	7.71	1.5	8.0	9.90	4.7	7.4	7.50	7.9	3.2	9.35	-2.1	8.7	11.71	3.3	5.1	7.32
Agricultural activities	-3.3	0.1	5.26	-3.0	1.2	2.88	-4.7	4.7	2.86	3.2	3.4	3.14	-0.2	-1.9	2.81	1.1	1.4	3.75	-0.04	-0.3	1.11
Non-agricultural activities	-1.1	5.8	10.68	6.6	6.4	5.65	-0.5	7.1	9.85	6.2	4.8	7.27	5.5	2.2	5.23	-1.7	6.3	10.30	3.8	-6.5	4.42

	Mandi			Shimla			Sirmaur			Solan			Una			Himachal Pradesh		
Activities/Districts	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
(1)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39	(40)
1. Agriculture and allied	2.8	2.1	2.26	1.8	10.0	1.51	3.8	4.5	2.64	2.8	0.6	0.18	1.9	9.7	6.13	1.1	1.9	1.84
2. Agricultural labour	-12.0	9.6	-8.97	1	3.4	1.81	-15	12.4	-2.22	-3.3	3.4	5.66	1.9	11	0.67	-7.4	3.7	-0.04
3. Mining and quarry	-	-3.1	9.60	-	4.8	-100.0	-	14.8	2.26	5.2	-15.0	31.10	-	-	-100.0	7.4	1.5	5.93
4. Manufacturing																		
(a) Household industries	-4.4	3.9	4.66	0.5	-4.9	23.54	0.7	-2.9	10.02	-1.9	1.6	0.85	7.2	1.1	4.48	-1.9	2.2	6.06
(b) Other than household industries	9.3	5.4	1.12	6.7	-2.6	-1.65	-2.6	4.9	2.35	24.6	9.9	0.92	8.8	8.7	12.30	11.1	3.9	4.90
5. Construction	10.1	1.7	12.04	17	-0.8	-2.41	-0.3	-14.1	0.00	4.0	-2.0	12.98	21.3	-3.3	13.10	6.7	-3.7	4.97
6. Trade and Commerce	-0.4	8.5	10.82	5.6	2.6	12.72	8.3	4.8	7.81	11.3	10.2	6.92	8.8	13.4	12.56	4.7	8.6	9.98
7. Transport and Communication	-5.7	6.6	-20.75	17.0	-2.5	-27.04	-5.7	10.8	-31.01	11.6	-2.6	-21.80	13.4	14.9	-24.39	1.8	-2.59	
8. Other services	5.1	10.6	8.87	5.4	6.2	11.87	3.7	10.1	8.38	3.4	6.5	9.85	6.5	8.9	8.79	4.2	7.9	9.10
Agricultural activities	2.6	2.1	-2.32	1.7	0.3	-2.32	3.2	4.6	2.56	2.7	1.1	0.31	1.2	9.7	5.91	0.8	1.9	1.80
Non–agricultural activities	2.3	8.3	8.10	7.2	3.3	8.10	1.0	5.2	7.26	5.7	6.3	6.96	7.6	7.2	9.14	4.1	4.9	8.06

Note: I = 1971-1981; II = 1981-1991; III = 1991-2001.

Hamirpur, Kangra, Kullu, Mandi, Solan and Una. Among the remaining districts, while the rates of growth were lower in the former period compared to the latter in Lahaul and Spiti, these were negative in Chamba, Kangra and Shimla. Likewise, the growth rates of employment of female workers in transport and communication were negative in most of the districts during the nineties whereas in trade and commerce these were higher in Bilaspur, Kinnaur, Kullu, Mandi, Shimla and Sirmaur and lower in the remaining districts. In a similar vein, there was also a significant acceleration in the rates of growth of female employment in other services over the period in a majority of the districts with the notable exceptions of Chamba, Mandi, Sirmaur and Una where these were lower in the nineties compared to the eighties.

IV

DETERMINANTS OF RURAL NON-FARM EMPLOYMENT

As mentioned above, gini ratio of operational holdings, urbanisation, the extent of commercialisation of agriculture (proxied by the proportion of area under non-foodgrains), literacy rates, proportion of poor, have been reported to be the main determinants of rural non-farm employment. Among these, while the first three represent the demand side, the latter two fall in the domain of supply side variables. In the present study, impact of the variables, representing both the demand and supply side of the market, on rural non-farm employment in all activities together and individually was quantified using a linear regression model fitted to a cross section of pooled data for the years 1981, 1991 and 2001. The results of the regression analysis for male and female workers are reproduced in Table 7 and Table 8, respectively. It may be seen from these tables that among demand side variables gini ratio of operational holdings, urbanisation and area under non-foodgrains were the important determinants of rural non-farm employment of both male and female workers. Insofar as the effect of these variables on rural non-farm employment in different activities was concerned, area under non-foodgrains had a significant positive effect on employment in construction activities and significant negative effect on employment in household industries for both the categories of workers. The effect of urbanisation on employment in most of the activities was negative, though it was statistically significant in case of employment in household industries, construction and other services in case of male workers and other services in case of female workers. Among the supply side variables, literacy level had a negative effect on employment in construction activities of both male and female workers and positive effect in activities like trade and commerce, transport and communication and other services. The effect of infrastructural variable, i.e., length of roads was, however, positive and significant in case of employment in other than household industries, construction and transportation and communication in the case of male workers and household industries, construction and transport and communication in the case of female workers. The results on the effect of urbanisation on rural non-farm employment

were at variance to those reported by almost all the studies on rural non-farm employment which was observed to be positive and significant (Jayaraj, 1994; Bhalla, 1993; Singh, 1994; Shukla, 1994). A notable exception was the study of Parthasarthy *et al* (1998) which found insignificant effect of urbanisation on rural non-farm employment. In our view, this could be attributed to mountainous character of the state where in most of the cases unlike plains, it is not possible to commute to residence in rural areas daily. Moreover, absence of a well developed urban hierarchy coupled with different nature of the urban areas of the state may also explain the unusual relationship between rural non-farm employment and urbanisation. For example, most of the urban areas in the state are administrative headquarters, except Parwanoo, Damtal, Barotiwala and Baddi that are in the vicinity of big cities of adjoining states. The industries located in these areas do not create strong backward linkages to inspire the growth of non-farm activities in rural hinterlands. Thus, the urban areas in the state are merely trading centres, selling commodities, most of which are imported from nearby cities like Chandigarh, Ambala, Delhi, Pathankot, Hoshiarpur, Ludhiana, etc. Likewise, the area under non-foodgrain crops had a significant positive effect on rural non-farm employment, especially in construction activities. This was a factual story. A visit to some parts of the districts like Shimla, Kullu, Solan and Chamba confirms the tremendous boost that an increase in area under high value horticultural, vegetable and floricultural cash crops had given to the construction activities.

TABLE 7. FACTORS AFFECTING RURAL NON-FARM EMPLOYMENT OF MALE WORKERS: RESULTS OF REGRESSION ANALYSIS

Variables (1)	Household industries (2)	Other than household industries (3)	Construction (4)	Trade and commerce (5)	Transport and communication (6)	Other services (7)	All activities (10)
Constant	-0.33	-4.82	18.21	-4.65	-0.72	-17.87	6.46
Gini ratio	5.01*	8.18	-13.46	5.52***	0.45	3.77	-15.41
	(-2.61)	(1.30)	(-1.34)	(1.86)	(0.25)	(0.43)	(-0.69)
Literacy	0.006	0.01	-0.16*	0.06*	0.01***	0.35*	0.35*
	(0.58)	(0.32)	(-2.64)	(3.55)	(1.65)	(6.59)	(2.58)
Urbanisation	-0.07*	0.01	-0.45*	-0.05	-0.03	-0.53*	-1.50*
	(-2.82)	(0.16)	(-3.40)	(-1.50)	(-1.34)	(-4.52)	(-5.10)
Area under	-0.02*	-0.04	0.23*	-0.02	-0.06	0.18*	0.47*
non-foodgrains	(-2.34)	(-0.13)	(4.08)	(-1.39)	(-0.68)	(3.55)	(3.69)
Proportion of	0.003	0.02	0.03	0.01	0.06	0.15*	0.19
poor	(0.03)	(0.57)	(0.51)	(0.90)	(0.57)	(2.88)	(1.39)
Road length	0.004	0.06*	0.08*	0.01	0.02*	0.01	0.26*
	(0.64)	(2.98)	(2.41)	(1.36)	(3.46)	(0.51)	(3.21)
R^{-2}	0.45	0.46	0.45	0.54	0.58	0.76	0.62
F	5.79	5.94	5.83	7.84	8.99	18.97	10.36
N	36	36	36	36	36	36	36

Notes: (i) Figures in parentheses are 't' values.
(ii) * and *** denote significance levels at 1 and 10 per cent, respectively.

TABLE 8. FACTORS AFFECTING RURAL NON-FARM EMPLOYMENT OF FEMALE WORKERS: RESULTS OF REGRESSION ANALYSIS

Variables	Household industries	Other than household industries	Construction	Trade and commerce	Transport and communication	Other services	All activities
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-4.83	-2.67	15.19	-3.79	-0.55	-11.21	-0.33
Gini ratio	7.76*	-1.49	-12.44	5.34**	0.44	1.53	5.01*
	(5.17)	(-0.23)	(-1.27)	(1.90)	(0.26)	(0.86)	(2.61)
Literacy	0.03*	0.06***	-0.16*	0.06*	0.01**	0.35*	0.006
	(3.64)	(1.76)	(-2.69)	(4.06)	(1.90)	(6.91)	(0.58)
Urbanisation	-0.02	0.03	-0.458	-0.05	-0.02	-0.51*	-0.07*
	(-1.17)	(0.46)	(-3.46)	(-1.46)	(-1.30)	(-4.51)	(-2.82)
Area under	-0.07	-0.01	0.24*	-0.02**	-0.008	0.15*	-0.02*
non foodgrains	(-0.83)	(0.72)	(4.19)	(1.80)	(-0.87)	(3.09)	(-2.33)
Proportion of	0.01*	0.04	0.03	0.01	0.006	0.15*	0.0003
poor	(2.19)	(0.11)	(0.55)	(1.01)	(0.65)	(2.89)	(0.97)
Road length	-0.09***	0.03	0.09*	0.008	0.02*	-0.007	0.006
	(-1.69)	(1.19)	(2.57)	(0.79)	(3.03)	(0.83)	(0.53)
R^{-2}	0.46	0.30	0.46	0.58	0.59	0.77	0.45
F	5.88	3.54	5.92	9.03	8.39	20.37	5.79
N	36	36	36	36	36	36	36

Notes: (i) Figures in parentheses are 't' values.
(ii) *, ** and *** denote significance levels at 1, 5 and 10 per cent, respectively.

V

CONCLUSIONS

In sum, the proportion of workers and males depending on rural non-farm employment at the state level has shown a rising trend since 1971. The district level analysis also showed a continuous decline in the proportion of rural workers, both male and female, depending on agriculture practically in all the districts. Consequently, in most of the districts, the proportion of those employed in rural non-farm sector as a whole and in different activities other than household industries, construction, trade and commerce, transport, storage and communication and other services increased by varying degrees. Over the time period, in a majority of the districts, the shift of both the categories of workers to different non-farm activities, especially in other services and construction activities was more pronounced during the nineties in comparison to the eighties. The growth rates of employment in different activities across districts, however, exhibited mixed patterns. While these were higher in some districts during the nineties, in others it was observed to be higher during the eighties. Nevertheless, the growth rates of employment in other services in most of the districts were significantly higher during the nineties compared to the eighties both for male and female workers.

In so far as the effect of different factors on rural non-farm employment was concerned, the results of regression analysis show that urbanisation had negative

effect and the area under non-foodgrain crops a positive and significant effect on employment in most of the activities. The literacy levels and proportion of poor had varied effects on employment in different activities. For example, while the former had significant positive effect on employment of both the categories of workers in most of the activities except construction, the latter had positive effect on employment in other services in the case of male workers and household industries and other services in case of female workers. Likewise, the effect of length of roads on rural non-farm employment was also positive and significant in activities other than household industries, construction and transport and communication.

The relative importance of different factors in influencing the growth of non-farm employment has, however, varied across districts. For example, in five districts, namely, Bilaspur, Hamirpur, Kangra, Una and Mandi, whose most of the geographical area falls in low hill sub-tropical zone, agriculture is largely cereal based and productivity is low. In these districts, non-farm employment, especially in other services, has always remained an important source of livelihood. And factors like high level of literacy and easy access to infrastructural facilities like education, health and rural roads have played an important role in facilitating the transfer of rural workforce from farm to non-farm activities. In comparison, the remaining seven districts, namely, Shimla, Kullu, Chamba, Sirmaur, Solan, Kinnaur and Lahaul and Spiti have experienced varying levels of crop diversification led growth of rural non-farm employment opportunities. As most of the geographical area of these districts falls in the mid-hill and sub-temperate zone, they are endowed with myriad of micro climatic niches to grow several high value cash crops like fruits and off-season vegetables. The process of crop diversification in these districts, which started in the sixties and the seventies, was facilitated by the committed state intervention in terms of adoption of developmental strategies incorporating regional specificities which created basic infrastructural facilities like rural roads thus breaking the barrier of inaccessibility. It gave a big boost to the expansion of non-farm employment opportunities through backward and forward linkages, more prominently in activities like construction, trade and commerce, transport, storage and communication and other services. Since the process of crop diversification is encompassing more and more areas including those in low hill districts, the rural non-farm employment opportunities are expected to grow in the years to come.

The most important lesson that emerges from the experience of the growth of rural non-farm employment in Himachal Pradesh for other hilly and mountainous states is that they must promote agricultural diversification towards high value cash crops by creating basic infrastructural facilities like rural roads and markets.[8] The process of crop diversification is expected to trigger the growth of rural non-farm employment opportunities through a host of backward and forward linkages in a number of activities particularly in construction and trade and commerce. The rural economies of hilly and mountainous states and those of neighbouring states have two way mutually beneficial relationships. For example, while the neighbouring states

sustain the process of crop diversification in the hilly and mountainous states by providing ever expanding demand for fruits and vegetables, these states in turn are the source of huge demand for the products produced in the non-farm sector of the neighbouring states.

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NOTES

1. For definitional aspects of rural non-farm employment, see Saith, 1992, pp. 12-16.

2. Similar pattern of change, both temporally and cross-sectionally, has been observed for Asian sub-region. See, Saith, 1992, pp. 25-32.

3. A recent review of literature on rural non-farm employment and poverty is available in Unni, 1998, pp. A-36-A-44 and Nayyar and Sharma, 2005.

4. Among different hypotheses, Vaidyanathan's residual sector hypothesis is most widely commented upon which despite numerous obituaries refuses to be buried even today. Some recent studies have questioned the rejection of residual sector hypothesis (Unni, 1997). Likewise, Parthasarathy *et al.,* found current daily status unemployment as the most important significant variable determining rural male non-farm employment which also suggested distress induced growth of non-agricultural employment (Parthasarathy *et al.,* 1998, p. 152). A more recent study for Uttar Pradesh also reported distress induced diversification of rural non-farm employment, especially in eastern Uttar Pradesh (Ranjan, 2009).

5. These studies are available in Visaria and Basant, 1994.

6. It needs to be underlined that while regional/district level analysis has its own importance in understanding the structure of rural non-farm employment, the impact of changes in the rural economy of a particular district may not be captured in district level variables. This has reportedly happened in Kerala where rural non-farm activities have not grown despite massive inflow of remittances and increase in demand for different goods and services. See Eapen, 1994, pp. 1285-1286.

7. According to the Population Census, other services include workers employed in community social and personal service including public administration, medical and health services. Also included are persons who happen not to adequately describe their activities or those whose services are not classified elsewhere.

8. The lessons from the agricultural development and crop diversification experience of Himachal Pradesh for other hilly and mountainous states have been given in Sharma, 2005a. Also see Sharma, 2005b.

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