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## SUBJECT II

### RURAL NON-FARM EMPLOYMENT

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#### **Rural Non-Farm Employment in India: Trends and Issues for Research\***

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An important objective of Indian planning since its inception has been to reduce the extent of dependence on agriculture. An increase in non-farm employment was seen as essential for improving the incomes and level of living of the rural population. The actual relevance of these concerns has exceeded the initial conceptualisation because the annual rate of growth of population (a little above 2.0 per cent on an average almost continuously since 1951) has been substantially above the rate observed when the initial plans were formulated (1.2-1.3 per cent during the 1930s and 1940s). The share of the rural population in the national total has declined from about 83 per cent in 1951 to 74 per cent in 1991. Yet, the rural population has more than doubled from 300 million in 1951 to 628 million in 1991.

The expansion of area under cultivation and the increase in the frequency of cropping, facilitated by the heavy investments in irrigation, have moderated the growth of the pressure of population on land. However, the continuing subdivision of land holdings to provide a share of the family assets to all the surviving sons has increased the number of land holdings and decreased their average size. The Indian inheritance systems do not follow the principles of primogeniture or ultimogeniture. The people have, however, often devised their own adjustment mechanisms and adapted the familial institutional structure in response to the emergent situation. A diversification of the pattern of economic activities pursued by the rural residents has also been a key element in this adjustment process.

This paper attempts to provide an overview of the process of diversification of economic activities of the rural population of India. It explores the data available from the censuses and several surveys conducted by the National Sample Survey (NSS) since the 1950s. The large number of small-scale micro-surveys are not quite suitable for the proposed analysis because of their varied definitions and conceptual frameworks to record the economic pursuits of the people.

The analysis at the all-India level is followed by a brief discussion of the inter-state similarities and differences with respect to changes in the share of agriculture, manufacturing and construction in the workforce.

#### TERMINOLOGICAL ISSUES

At the outset, it is necessary to clarify that in usual parlance, the difference between farm employment and agricultural employment is seldom recognised. It is possible to restrict the term "farm employment" to relate to activities involving crop production; but dairy farming and poultry farming are commonly used terms and are really a part of agriculture. Besides, dairying and poultry are often pursued simultaneously with crop production in most parts

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\* Keynote paper.

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of the country. If, therefore, farming is defined as equivalent to the activities included in the industry division 0 of the standard industrial classification, the available data set becomes quite large because a considerable volume of data is often not tabulated beyond the one-digit classification.

Secondly, as attention is focussed on "rural non-farm employment", not all such activities are carried on in rural areas. All data collection activities tabulate the data according to the area of residence of respondents, separately for rural and urban areas, and not according to the place of work or the location of economic activity. (In fact, the National Sample Survey generally does not even combine the data for rural and urban areas because the available estimates of rural and urban population are not quite firm and subsequent changes in these estimates would require re-tabulation.) Several rural workers do indeed commute to urban centres for their economic activities. The 43rd Round of the NSS, conducted during 1987-88, estimated that almost 2.5 million male workers and 151,000 female workers residing in rural areas had a reported place of work in a neighbouring town or city. (On the other hand, some 569,000 male workers and 109,000 female workers residing in an urban area reported a village as their place of work.)<sup>1</sup> A large majority of the rural workers in urban areas and urban workers in rural areas presumably undertake non-agricultural activities although the tables do not explicitly indicate the nature of their economic activities. Admittedly, however, the impressive absolute numbers of rural-urban and urban-rural commuter workers formed only 1.7 per cent of the rural male workforce and 1.4 per cent of the urban male workforce.

Thirdly, quite apart from the non-agricultural activities of the commuting workers, the rural economy does support a fair measure of non-farm work. The urban professionals with limited contact with the multitude of Indian villages are likely to overlook the fact that even in 1991, the decennial census had enumerated no less than 39.44 million workers (33.59 million males and 5.85 million females) based in rural India, whose main activity was some non-agricultural industry.<sup>2</sup> Also, the Economic Census of 1990, undertaken as part of the house listing operations preceding the 1991 population census, had listed 9.5 million "own-account establishments" and 3.2 million other non-agricultural establishments in rural areas of the country; these establishments reportedly employed a total of 29.1 million usual workers.<sup>3</sup>

Finally, the rural population usually grows at a lower rate than the total population of the country or a state because of the process of urbanisation. The pace of urbanisation in India has been slow; the proportion of urban population has risen from about 17 per cent in 1951 to 26 per cent in 1991. The highest observed rate of urbanisation in Maharashtra State in 1991 does not exceed 38 per cent.<sup>4</sup> The inter-state comparisons must take due account of the level and pace of urbanisation as well as the rate of natural increase of the population in different territorial units. The issue is important because beginning with the 1961 Census, localities with a high proportion (75 per cent or more) of workers pursuing non-agricultural activities are likely to be reclassified as new towns at the time of the next census.<sup>5</sup> Therefore, the rural population is usually likely to show a relatively slower pace of growth of non-farm activities than the total population of a state or a country.<sup>6</sup>

#### WORKER-POPULATION RATIOS OF THE RURAL POPULATION

An analysis of the changes in the share of non-farm employment in the rural economy must necessarily begin with a review of the worker-population ratios (WPRs) because changes in the latter can offset some of the sectoral shifts in the distribution of workers. Table I summarises the available evidence on the subject beginning with the 1951 Census.

TABLE I. INDIA: CRUDE WORKER POPULATION RATIOS BY SEX AND RURAL URBAN RESIDENCE, 1951 TO 1992

Year/Source/ (NSS Round) (1)	India			Rural areas			Urban areas		
	Persons (2)	Males (3)	Females (4)	Persons (5)	Males (6)	Females (7)	Persons (8)	Males (9)	Females (10)
1951 Census	39.1	53.9	23.4	39.5	53.5	25.0	37.1	56.4	14.7
1955 NSS (9)	-	-	-	43.2	59.2	26.6	32.4	51.4	11.6
1960-61 NSS (16)	-	-	-	40.3	54.2	25.9	33.2	51.0	13.2
1961-62 NSS (17)	-	-	-	35.6	50.2	20.3	31.2	49.4	10.5
1961 Census	43.0	57.1	28.0	45.1	58.2	31.4	33.5	52.4	11.1
1971 Census	34.0	52.7	13.9	36.1	53.6	15.5	29.6	48.9	13.2
1972-73 NSS (27)	40.7	52.7	27.8	42.8	53.6	31.4	32.6	49.4	13.2
1977-78 NSS (32)	41.6	53.4	28.9	43.8	54.4	32.6	33.9	50.0	15.3
1981 Census*	36.8	52.6	19.8	38.9	53.8	23.2	30.0	49.1	8.3
1983 NSS (38)	41.8	53.5	29.3	44.2	54.3	33.7	34.0	50.9	14.9
1987-88 NSS (43)	40.9	53.0	28.0	43.3	53.9	32.3	34.0	50.6	15.2
1989-90 NSS (45)	41.5	53.9	27.9	43.7	54.8	31.9	33.7	51.2	14.6
1990-91 NSS (46)	40.4	54.2	25.4	42.7	55.3	29.2	33.8	51.3	14.3
1991 Census*	37.5	51.6	22.3	40.0	52.5	26.7	30.2	48.9	9.2
July-December 1991 NSS (47)	40.1	53.8	25.3	42.4	54.6	29.4	33.4	51.6	13.2
Jan-December 1992 NSS (48)	41.2	54.3	27.2	43.7	55.6	31.3	33.6	50.7	14.6

\* Excludes Jammu and Kashmir. @ Assam is excluded.

Notes: 1. The ratios based on the NSS 27th, 32nd and 38th Rounds have been obtained by weighing the worker-population ratios for broad age-groups by interpolated population figures from the smoothed age distributions of the population enumerated in 1971 and 1981 and the projected population for 1986. The estimates for 1987-88 take account of the projected population as on January 1, 1988 but not of the age specific worker population ratios.

2. Alternative estimates of crude worker population ratios based on the NSS Rounds for 1972-73 to 1983 are shown below.

Round/Year (1)	Rural areas		Urban areas	
	Males (2)	Females (3)	Males (4)	Females (5)
27 (1972-73)	54.5	31.8	50.1	13.4
32 (1977-78)	55.2	33.1	50.8	15.6
38 (1983)	54.7	34.0	51.2	15.1

See *Sarvekshana*, Special Number, September 1990, p. 60.

The estimates published earlier pertained to population aged five years and over. The earlier estimates have been adjusted by including persons aged 0-4 in the denominator. This adjustment procedure differs from that outlined in note 1 above; and hence the difference between the two sets of estimates.

#### Sources:

1. NSS, Government of India, Report Nos. 62, 103, 114, 127 and 190 on Employment and Unemployment (9th, 16th and 17th Rounds).
2. Census of India 1961, Vol. 1, India, Part II-A(i), General Population Tables; and Part II-8(i), General Economic Tables.
3. Census of India 1961, Paper No. 1 of 1962, Final Population Tables, pp. lxx.
4. Census of India, 1971, Series 1, India, Part II-B(i), and Part-B(ii), General Economic Tables, pp. 20-74, and pp. 291-304.
5. Census of India 1971, Series 1, India, Part-B(ii), Social and Cultural Tables, pp. 106-129.
6. Census of India 1981, Series 1, India, Part II-B(i), Primary Census Abstract; General Population, pp. xlvii-lvi.
7. NSSO, Government of India, *Sarvekshana*, Special Number, September 1990.
8. Census of India 1991, Series 1, India, Paper 2 of 1992.
9. NSSO, Government of India, *Sarvekshana*, Vol. 16, No. 1, July-September 1992.
10. NSSO, Government of India, Tables with Notes on the Fourth Annual Survey on Consumer Expenditure and Employment-Unemployment, December 1992.
11. NSSO, Government of India, Tables with Notes on Fifth Annual Survey on Consumer Expenditure and Employment-Unemployment, NSS 47th Round (Report No. 388).
12. NSSO, Government of India, Household Consumer Expenditure and Employment Situation in India, NSS 48th Round (Report No. 397).
13. Seal, K.C. 'Women in the Labour Force in India: A Macro-Level Statistical Profile', Asian Regional Team for Employment Promotion, International Labour Organisation, pp. 43.

It includes the census-based estimates as well as the results of the four large quinquennial surveys of employment and unemployment conducted by the National Sample Survey (NSS) during 1972-73, 1977-78, 1983, and 1987-88. The estimates based on the subsequent annual surveys of a relatively small sample are also reported.<sup>7</sup>

The NSS surveys on employment and unemployment conducted between 1958-59 and 1967-68 were based on a short reference period of one week. The two large surveys conducted during 1960-61 and 1961-62 and cited here had reported markedly lower WPRs than the 1961 Census, particularly for rural areas. Beginning with 1972-73, the NSSO surveys began to estimate the level of employment according to the three alternative reference periods of the last year (usual status), the week preceding the date of survey, and each day of the reference week.

The four surveys of 1972-73, 1977-78, 1983, and 1987-88 have shown a remarkable stability in WPRs based on the usual status approach; also, the latter are similar to those reported by the 1961 Census. These estimates confirm that despite substantial population growth since 1951, the WPRs have not really declined; the contrary indications from the 1971 and the 1981 Censuses must be attributed to the difficulties of obtaining dependable counts of the female workforce through honorary enumerators with only a limited interest in their assignment.

When the results of the 43rd Round relating to the 1987-88 survey became available, some doubt had arisen whether and how far they reflected the depressing effect of the severe scarcity during the particular agricultural year on the WPRs. According to the subsequent three annual and one half-yearly surveys, the male WPRs were higher than the figure reported by the 43rd Round, particularly in rural areas. (For males in urban India, the WPR reported by the survey during calendar year 1992 was just 0.1 percentage point above the figure based on the 1987-88 survey.) The female WPRs based on the recent surveys, however, have all been lower than those based on the 1987-88 survey. The results of the fifth quinquennial survey, conducted during 1993-94, are expected to help understand the level of WPRs during a normal agricultural year.

When the WPRs are not quite comparable, the underlying industrial distribution of workers cannot be presumed to reflect the reality because the excluded workers are not necessarily distributed at random over different industrial divisions or groups. However, the share of the agricultural sector in total employment was remarkably similar according to both the 1961 Census and the 16th Round of the NSS: 80.9 and 80.3 per cent for rural males and 86.4 and 86.2 per cent for rural females, both respectively. For the country as a whole, the share of agriculture in the total workforce was 72.9 per cent according to the 1961 Census and 72.1 per cent according to the 1960-61 survey of the NSS.

#### THE SHARE OF AGRICULTURE IN THE WORKFORCE

In view of the differences in the underlying conceptual framework, the difference in the estimated share of agriculture in the workforce according to the census and the NSS for the early 1960s seems very small indeed. One can, therefore, accept the 1961 census estimate as a good benchmark. Overlooking the 1971 census data, one finds the 1972-73 NSS estimate of the proportion of the workforce engaged in agriculture in rural India (85.6 per cent) to be almost two percentage points higher than that based on the 1961 Census (83.7 per cent).

According to the data summarised in Table II, after 1972-73, the share of agriculture

TABLE II. INDIA: NUMBER (IN MILLIONS) AND PERCENTAGE OF WORKERS IN THE AGRICULTURAL AND NON-AGRICULTURAL SECTORS, 1972-73 TO 1987-88

Sector/Sex/ Industry (1)	1972-73		1977-78		1983		1987-88	
	Number (2)	Per cent (3)	Number (4)	Per cent (5)	Number (6)	Per cent (7)	Number (8)	Per cent (9)
<b>Rural India</b>								
<b>Persons</b>								
Agriculture	169.1	85.6	183.5	83.4	198.9	81.5	201.8	78.3
Non-agriculture	28.5	14.4	36.5	16.6	45.1	18.5	55.9	21.7
All	197.6	100.0	220.0	100.0	244.0	100.0	257.7	100.0
<b>Males</b>								
Agriculture	105.9	83.3	113.0	80.7	119.4	77.8	122.9	74.6
Non-agriculture	21.2	16.7	27.1	19.3	33.9	22.2	41.8	25.4
All	127.1	100.0	140.1	100.0	153.3	100.0	164.7	100.0
<b>Females</b>								
Agriculture	63.2	89.7	70.5	88.2	79.5	87.8	78.9	84.2
Non-agriculture	7.3	10.3	9.4	11.8	11.0	12.2	14.1	15.8
All	70.5	100.0	79.9	100.0	90.5	100.0	93.0	100.0
<b>Urban India</b>								
<b>Persons</b>								
Agriculture	5.8	14.8	7.4	15.2	8.7	14.8	9.1	13.6
Non-agriculture	33.3	85.2	41.4	84.8	50.1	85.2	57.9	86.4
All	39.1	100.0	48.8	100.0	58.8	100.0	67.0	100.0
<b>Males</b>								
Agriculture	3.4	10.7	4.1	10.6	4.8	10.3	4.8	9.1
Non-agriculture	28.4	89.3	34.4	89.4	41.8	89.7	48.1	90.9
All	31.8	100.0	38.5	100.0	46.6	100.0	52.9	100.0
<b>Females</b>								
Agriculture	2.4	32.9	3.3	31.9	3.9	32.0	4.3	30.5
Non-agriculture	4.9	67.1	7.0	68.1	8.3	68.0	9.8	69.5
All	7.3	100.0	10.3	100.0	12.2	100.0	14.1	100.0
<b>India</b>								
<b>Persons</b>								
Agriculture	174.9	73.9	190.9	71.0	207.6	68.6	210.9	65.0
Non-agriculture	61.8	26.1	77.9	29.0	95.2	31.4	113.8	35.0
All	236.7	100.0	268.8	100.0	302.8	100.0	324.7	100.0
<b>Males</b>								
Agriculture	109.3	68.8	117.1	65.6	124.2	62.6	127.7	58.7
Non-agriculture	49.6	31.2	61.5	34.4	75.9	37.4	89.9	41.3
All	158.9	100.0	178.6	100.0	200.1	100.0	217.6	100.0
<b>Females</b>								
Agriculture	65.6	84.3	73.8	81.8	83.4	81.2	83.2	77.7
Non-agriculture	12.2	15.7	16.4	18.2	19.3	18.8	23.9	22.3
All	77.8	100.0	90.2	100.0	102.7	100.0	107.1	100.0

seems to have declined by almost 8 percentage points to 65 per cent by 1987-88. As would be expected, the share of agriculture in the rural workforce in 1987-88 (78 per cent) was higher than in the urban workforce (14 per cent). Urbanisation has thus been a factor contributing to the process of diversification of the pattern of economic activities in the country as a whole. Interestingly, however, the positive correlation between the percentage of urban population in the 18 more populous states in 1991 and the proportion of male and female workforce in rural areas engaged in agriculture in 1987-88 was not statistically significant. The percentage of rural households reporting non-agricultural activities as the major source of their income did, however, have a significant positive correlation with the proportion of urban population in the 18 states.

Looking at the rural workforce separately, one notices a marked decline of almost 9 percentage points in the share of male workers engaged in agricultural activities. The corresponding fall in the female workforce is only 5 percentage points. The data for both sexes together show a drop of 7 percentage points in the share of agriculture. Albeit, with the continuing growth of the rural population and labour force, the absolute number of agricultural workers has continued to grow, more or less throughout the country. Also, there is little evidence of any replacement of male labour by female labour in Indian agriculture.

The data relating to rural female workforce suggest a decline in the absolute number of agricultural workers between 1983 and 1987-88. This decline is a result of both the 1.8 percentage point decline in the rural female WPR and the rise in the construction sector employment. To adjust partly for the former factor, one can average the rural female WPRs reported for 1977-78 and 1983; the figure is 33.6 per cent. The adjusted number of usually working females in rural India was 96.8 million, 3.8 million more than the 93.0 million reckoned on the basis of the 43rd Round estimates. The next important issue pertains to the distribution of 3.8 million additional workers by sector. If all them are presumed to be working in agriculture, the adjusted number of rural female agricultural workers would be 82.7 million (and not 78.9 million); and their share in the female workforce would be 85.8 per cent (a little above the estimate of 84.2 per cent). The share of agriculture in the rural workforce of both sexes together in 1987-88 would rise marginally from 78.3 to 78.6 per cent.

#### GROWTH OF NON-AGRICULTURAL EMPLOYMENT

According to the data summarised in Table II, the non-agricultural employment among rural males of India has expanded at an average annual rate of 4.7 per cent while agricultural employment has expanded at an average annual rate of only 1 per cent. The corresponding rates of growth of rural female employment were 4.6 and 1.5 per cent respectively. (Our adjusted estimate of female WPR and agricultural employment in rural India implies a growth rate of 1.8 per cent in agricultural employment among women.)

The share of agriculture in urban employment has not declined to any noteworthy extent because of the continuing survival of a rural fringe as well as of activities such as gardening, nurseries, and/or floriculture. Urbanisation nevertheless raises the share of non-agricultural employment in the country because agricultural employment tends to be much lower in towns and cities than in rural areas.

Table III shows in a summary form the sectoral distribution of the workforce in rural areas by sex, both in percentages and in absolute numbers. The average annual rates of growth over the 14 years and three quarters between the mid-points of the initial and the last survey years have also been shown in Table III.

TABLE III. RURAL INDIA: NUMBER (IN MILLIONS) AND PERCENTAGE DISTRIBUTION OF WORKERS (USUAL STATUS) BY SEX, 1972-73 TO 1987-88, AND AVERAGE ANNUAL GROWTH RATE (PER CENT) OVER THE 15-YEAR PERIOD

Sector/ Sex (1)	1972-73		1977-78		1983		1987-88		Growth rate (10)
	Number (2)	Per cent (3)	Number (4)	Per cent (5)	Number (6)	Per cent (7)	Number (8)	Per cent (9)	
Rural India									
Persons									
1. Agriculture	169.1	85.6	183.5	83.4	198.9	81.5	201.8	78.3	1.2
2. Mining & Quarrying	0.6	0.3	0.8	0.4	1.2	0.5	1.5	0.6	6.4
3. Manufacturing	10.6	5.4	13.7	6.2	16.6	6.8	18.6	7.2	3.9
4. Electricity, Gas & Water	0.1	0.1	0.3	0.1	0.3	0.1	0.5	0.2	11.5
5. Construction	2.8	1.4	2.9	1.3	4.0	1.6	8.6	3.3	7.9
6. Trade, Hotels etc.	5.0	2.5	7.2	3.3	8.4	3.4	10.3	4.0	5.0
7. Transport & Storage	1.3	0.6	1.8	0.8	2.7	1.1	3.4	1.3	6.7
8. Services	8.1	4.1	9.8	4.5	11.9	4.9	13.0	5.1	3.3
All	197.6	100.0	220.0	100.0	244.0	100.0	257.7	100.0	1.8
Males									
1. Agriculture	105.9	83.3	113.0	80.7	119.4	77.8	122.9	74.6	1.0
2. Mining & Quarrying	0.5	0.4	0.7	0.5	0.9	0.6	1.1	0.7	5.5
3. Manufacturing	7.3	5.7	9.0	6.4	10.8	7.0	12.2	7.4	3.5
4. Electricity, Gas & Water	0.1	0.1	0.3	0.2	0.3	0.2	0.5	0.3	11.5
5. Construction	2.0	1.6	2.4	1.7	3.4	2.2	6.1	3.7	7.9
6. Trade, Hotels etc.	3.9	3.1	5.6	4.0	6.7	4.4	8.4	5.1	5.3
7. Transport & Storage	1.3	1.0	1.7	1.2	2.6	1.7	3.3	2.0	6.5
8. Services	6.1	4.8	7.4	5.3	9.4	6.1	10.2	6.2	3.5
All	127.1	100.0	140.1	100.0	153.5	100.0	164.7	100.0	1.8
Females									
1. Agriculture	63.2	89.7	70.5	88.2	79.5	87.8	78.9	84.8	1.5
2. Mining & Quarrying	0.1	0.2	0.1	0.2	0.3	0.3	0.4	0.4	9.9
3. Manufacturing	3.3	4.7	4.7	5.9	5.8	6.4	6.4	6.9	4.6
4. Electricity, Gas & Water	-	-	-	-	-	-	-	-	-
5. Construction	0.8	1.1	0.5	0.6	0.6	0.7	2.5	2.7	8.0
6. Trade, Hotels, etc	1.1	1.5	1.6	2.0	1.7	1.9	1.9	2.1	3.8
7. Transport & Storage	-	-	0.1	0.1	0.1	0.1	0.1	0.1	-
8. Services	2.0	2.8	2.4	3.0	2.5	2.8	2.8	3.0	2.3
All	70.5	100.0	79.9	100.0	90.5	100.0	93.0	100.0	1.9

N = Negligible.

According to these data, the public utilities have been a very dynamic sector in the rural economy, with an average annual growth of over 11 per cent. Only male workers are employed in these activities; but the increase in the number of India's villages with access to electricity has been a major change agent. Gas and water supply are not yet significant in most villages of the country. But despite all its well-known inadequacies, the percentage of electrified villages in the country has risen from 0.3 and 3.8 at the end of 1947 and 1960-61 respectively, to 21 by 1971-72 and further to 86 by December 31, 1994.<sup>8</sup> The associated growth of employment seems to be a major fact of rural life.

The next highest rate of growth in employment (of the order of 8 per cent) is seen in construction employment. Minhas and I have earlier hypothesised that the growth of construction employment was partly a result of scarcity relief works initiated in states such as Gujarat and Rajasthan.<sup>9</sup> While the hypothesis is probably valid and is expected to be confirmed when the results of the quinquennial survey become available, the annual NSS surveys of employment and unemployment do suggest persistent high levels of construction



employment in rural India during 1989-90 and July-December 1991 and in urban India throughout the late 1980s. These estimates are summarised in Table IV. The volume of rural female employment in construction has declined considerably after 1987-88 but the proportion of rural males working in the sector has remained quite high. The public sector expenditure on rural and urban employment schemes as well as the private and public investments have probably been a contributory factor.

TABLE IV. PERCENTAGE OF USUAL STATUS WORKERS EMPLOYED IN "CONSTRUCTION" INDUSTRY, INDIA 1972-73 TO 1992 (NSS RESULTS)

NSS Round/ Year (1)	Rural			Urban		
	Persons (2)	Males (3)	Females (4)	Persons (5)	Males (6)	Females (7)
27 (1972-73)	1.4	1.6	1.1	4.1	4.4	2.7
32 (1977-78)	1.3	1.7	0.6	3.7	4.2	2.2
38 (1983)	1.6	2.2	0.7	4.8	5.2	3.3
43 (1987-88)	3.3	3.7	2.7	5.4	5.9	3.5
45 (1989-1990)	3.3	4.2	1.7	5.7	6.3	3.2
46 (1990-91)	2.2	2.7	1.3	5.0	5.4	3.6
47 (July-December 1991)	3.1	3.6	2.1	5.5	6.0	3.6
48 (1992)	2.1	2.7	0.9	5.7	6.2	3.6

Sources: 1. *Sarvekshana*, Special Number, September 1990.

2. NSSO, Annual Survey Reports on Consumer Expenditure and Employment-Unemployment (Report Nos. 381, 386, 388 and 397), New Delhi.

Other sectors with relatively high rate of growth of employment have been transport, storage and communications; trade and commerce; and mining and quarrying. Employment in manufacturing and in "other" services has shown rather modest growth within the non-agricultural sector. The continuing decline of the household industry and the substitution of capital for labour even in rural areas, particularly in food processing and flour preparation, have restricted the growth of manufacturing employment.<sup>10</sup> The services sector probably continues to conceal a fair degree of under-employment. However, a better perspective on the subject can be obtained by examining the status or class distribution of workers engaged in these activities. For reasons of time and space, such an exercise will have to be undertaken at a later date.

#### THE INTER-STATE DIFFERENCES IN THE PACE OF DIVERSIFICATION

In view of the large size of our population and the diversity of socio-economic situation in different regions, it is necessary to examine the state-level patterns of changes in the nature of economic activities. However, the WPRs, which are generally stable at the national level, show considerable fluctuations over four surveys. Such fluctuations are only to be expected because of the relatively smaller sample at the state level; however, it is difficult to disentangle sampling errors (which are expected to be small) from non-sampling errors (which might be larger). An unexplored research theme is the extent of comparability between the central and the state sample estimates of these variables. The social scientists need to pressurise the state-level statistical authorities to compile, tabulate and release the state-sample data. Pending such an effort, the following discussion is limited to the change in the share of agriculture in the workforce of more populous states and the extent to which a compensating change is seen in the share of manufacturing and construction sectors in employment.

Table V summarises the percentage point decline in the proportionate share of agriculture in the rural male and female workforce in 16 more populous states of India, that account for almost 96 per cent of our national population. According to these data, only Assam and Uttar Pradesh were exceptions to the pattern of steady (or monotonous) decline in the share of rural male workforce engaged in agriculture; the decline ranged between a minimum of 5 and a maximum of 22 percentage points. The low value of decline in the share of agriculture in the male workforce was seen in Maharashtra, Bihar and Uttar Pradesh; the three states have the highest and the lowest levels of urbanisation in the country and they accounted for a total population of 306 million (36 per cent of the national total).

TABLE V. PERCENTAGE POINT CHANGE BETWEEN 1972-73 AND 1987-88 IN THE SHARE OF RURAL WORKFORCE IN AGRICULTURE, MANUFACTURING AND CONSTRUCTION

State (1)	Agriculture		Manufacturing		Construction	
	Rural Male (2)	Rural Female (3)	Rural Male (4)	Rural Female (5)	Rural Male (6)	Rural Female (7)
India	-8.7 <sup>m</sup> (83.3)	-4.9 <sup>m</sup> (89.7)	+1.7 <sup>m</sup> (5.7)	+2.2 <sup>m</sup> (4.7)	+2.1 <sup>m</sup> (1.6)	+1.6 <sup>s</sup> (1.1)
Andhra Pradesh	-8.8 <sup>m</sup> (82.9)	-6.6 <sup>m</sup> (88.6)	+1.5 <sup>m</sup> (6.4)	+3.8 <sup>m</sup> (3.9)	+2.2 <sup>m</sup> (0.7)	+1.0 <sup>m</sup> (0.2)
Assam	-7.9 <sup>m</sup> (85.2)	-5.4 <sup>m</sup> (88.0)	+1.3 <sup>m</sup> (1.0)	7.8 <sup>m</sup> (2.0)	-0.1 <sup>n</sup> (1.2)	+0.2 <sup>m</sup> (0.0)
Bihar	-4.7 <sup>m</sup> (84.6)	+1.2 <sup>n</sup> (89.0)	-0.6 <sup>s</sup> (5.5)	-1.1 <sup>n</sup> (5.2)	+1.9 <sup>m</sup> (0.4)	+0.6 <sup>s</sup> (0.2)
Gujarat	-16.1 <sup>m</sup> (84.7)	-17.7 <sup>m</sup> (93.6)	+3.6 <sup>m</sup> (5.6)	+1.6 <sup>m</sup> (2.0)	+7.6 <sup>m</sup> (1.9)	+14.8 <sup>m</sup> (2.1)
Haryana	-11.9 <sup>m</sup> (82.7)	-1.8 <sup>s</sup> (94.3)	+3.0 <sup>m</sup> (5.4)	+1.1 <sup>n</sup> (1.7)	+1.3 <sup>m</sup> (2.5)	-0.3 <sup>n</sup> (0.7)
Himachal Pradesh	-12.5 <sup>m</sup> (81.2)	-2.0 <sup>m</sup> (98.4)	+3.3 <sup>m</sup> (3.3)	+1.2 <sup>m</sup> (0.6)	+5.9 <sup>m</sup> (5.4)	-0.2 <sup>n</sup> (0.5)
Karnataka	-8.1 <sup>m</sup> (87.7)	-7.1 <sup>m</sup> (92.6)	+1.9 <sup>m</sup> (4.3)	+5.2 <sup>m</sup> (3.6)	+0.7 <sup>m</sup> (1.5)	+0.7 <sup>m</sup> (0.3)
Kerala	-7.0 <sup>m</sup> (61.2)	-2.3 <sup>m</sup> (68.1)	-2.7 <sup>m</sup> (13.1)	-0.6 <sup>s</sup> (19.6)	+3.0 <sup>m</sup> (3.3)	0.2 <sup>n</sup> (0.6)
Madhya Pradesh	-6.6 <sup>m</sup> (91.1)	-6.1 <sup>m</sup> (97.2)	+1.8 <sup>m</sup> (3.1)	+3.3 <sup>m</sup> (1.7)	+0.9 <sup>m</sup> (0.5)	+1.5 <sup>s</sup> (0.2)
Maharashtra	-5.3 <sup>m</sup> (81.1)	+1.7 <sup>m</sup> (89.8)	+1.3 <sup>m</sup> (5.8)	0.2 <sup>n</sup> (2.5)	-1.3 <sup>n</sup> (4.8)	-2.4 <sup>m</sup> (5.3)
Orissa	-9.8 <sup>m</sup> (84.8)	-8.3 <sup>m</sup> (86.3)	+0.2 <sup>m</sup> (5.9)	+1.9 <sup>m</sup> (9.5)	+3.1 <sup>m</sup> (0.8)	+2.2 <sup>m</sup> (0.3)
Punjab	-16.0 <sup>m</sup> (84.9)	-1.4 <sup>n</sup> (93.0)	+5.1 <sup>m</sup> (4.6)	-0.5 <sup>n</sup> (3.3)	+2.0 <sup>m</sup> (2.0)	-
Rajasthan	-21.7 <sup>m</sup> (87.0)	-12.7 <sup>m</sup> (96.0)	+2.6 <sup>m</sup> (5.1)	+2.7 <sup>m</sup> (1.4)	11.4 <sup>m</sup> (2.1)	8.9 <sup>m</sup> (1.3)
Tamil Nadu	-14.4 <sup>m</sup> (79.6)	-10.9 <sup>m</sup> (88.0)	+5.5 <sup>m</sup> (7.9)	+7.1 <sup>m</sup> (5.8)	+2.1 <sup>m</sup> (1.1)	1.0 <sup>m</sup> (0.2)
Uttar Pradesh	-4.6 <sup>s</sup> (83.5)	+1.8 <sup>m</sup> (89.6)	+1.5 <sup>m</sup> (5.7)	-0.6 <sup>s</sup> (4.4)	0.8 <sup>m</sup> (1.6)	0.1 <sup>n</sup> (0.3)
West Bengal	-6.4 <sup>m</sup> (78.6)	+4.9 <sup>m</sup> (65.9)	+1.9 <sup>m</sup> (7.2)	+1.9 <sup>m</sup> (17.7)	0.9 <sup>m</sup> (0.9)	-0.4 <sup>n</sup> (1.0)

m: Monotonous change. n: Non-monotonous tendency.

Figures in parentheses report the initial figures (for 1972-73) of percentages of workers engaged in a particular sector.

The share of agriculture in the rural female workforce has not declined throughout the country. In four states (Bihar, Maharashtra, Uttar Pradesh and West Bengal), accounting for 372.5 million or 44 per cent of the national population, the share of the rural female workforce engaged in agriculture had actually increased over the 15-year period. Of course, the increase was not monotonous or steady in any of the four states. Among the 12 remaining states, showing a decline in the share of rural female workforce engaged in agriculture, nine states reported a monotonous decline ranging between 2 and 18 percentage points, whereas three states (Punjab, Haryana and Kerala) showed a non-monotonous downward trend and ended up with a very limited fall of between 1 and 2 percentage points over the 15-year period.

The extent to which the decline in the share of agriculture in rural employment has been accompanied by growth of manufacturing employment is an interesting question. The data suggest considerable growth of rural male employment in manufacturing in Punjab, Gujarat, Haryana, Himachal Pradesh and Tamil Nadu. (Even in Assam, the percentage of rural males working in manufacturing seems to have doubled but with the low base figure, the stability of the change is not quite clear.) On the other hand, Bihar and Kerala show a decline in the proportion of rural males engaged in manufacturing activities. In other states, the increase in the proportion of rural male workers undertaking manufacturing activities has been rather modest.

The share of rural female workers undertaking manufacturing has declined over the 15-year period in Bihar, Kerala, Punjab and Uttar Pradesh. It has increased significantly in several states such as Assam, Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu. The increase has been quite small in Maharashtra, Orissa and West Bengal. Where the initial share of manufacturing employment is low, the increases or decreases can appear large in percentage terms. However, given the large population of most states, the absolute magnitudes of change might be far from small.

Rural male employment in construction seems to have increased very substantially over the 15-year period in Rajasthan and Gujarat. A decrease in such employment is seen in Maharashtra. (The very small decline in Assam is difficult to interpret.) The changes in all the three states might be related to the scarcity relief employment in 1987-88 relative to its level in 1972-73 (which was also a scarcity year in many parts of the country). Otherwise, several states of the country, including Andhra Pradesh, Bihar, Himachal Pradesh, Kerala, Madhya Pradesh, Orissa, Punjab, Tamil Nadu, and West Bengal show a marked growth in the share of construction employment.

The percentage of rural female workers engaged in construction was smaller than that of rural males in the base year (1972-73) in all the states except Gujarat and Maharashtra. It has risen substantially in Gujarat and Rajasthan. The increases are quite sizeable in several other states also. The extent to which these increases were transient effects of public sector action to neutralise the impact of the vagaries of the weather on the living standards of the rural population will soon be clear when the results of the 1993-94 survey become available. In the meanwhile, we need to formulate a strategy to understand the dynamics of rural employment in the country.

## RESEARCH FOR UNDERSTANDING THE ONGOING CHANGE

The search for the factors contributing to the faster growth of non-agricultural employment in rural India has not yielded many insights. The economists can rationalise it in terms of the low income elasticity of demand for foodgrains as well as the growing pressure of population on land, which has led to a steady decline in the average size of land holdings as well as an increase in the proportion of small and marginal holdings. The reported level of landlessness does not show a noteworthy rise.<sup>11</sup> The decline in the share of agricultural employment does not show any significant association with the rise in urbanisation in various states nor with the percentage of households not cultivating any land.<sup>12</sup>

Vaidyanathan's characterisation of the relatively rapid growth of non-agricultural employment as "residual" and/or distress-based is difficult to test and does not, *prima facie*, seem very plausible.<sup>13</sup> This is particularly so because as Vaidyanathan himself has recently pointed out, the rural wage rates seem to have risen in real terms during the 1970s and 1980s. More importantly, there is some interesting evidence, based on the 1991 census data relating to the nature of activities of "main" workers, that seems to point to the size of the market as an important factor influencing the scope for non-agricultural employment. Only a brief discussion of these data is feasible here.

We need to examine carefully the activity mix in different villages, classified according to their size in terms of population, which is a basic indicator of the size of the market. According to the primary census abstracts released by the 1991 Census, the share of cultivators in the workforce varies inversely with size and that of agricultural labourers as well as workers engaged in "other services" and some of the non-agricultural activities rises with the size class of the village. Quite likely, these patterns emerge because a certain minimum population size is essential for the development of the market for labour, products, or services, before some workers can specialise in non-farm activities. Of course, the people residing in small villages meet their needs for non-farm goods and services either by travelling to or by buying them from the itinerant suppliers based in the larger villages or towns in their vicinity.

The diversification of the structure of economic activities or the working force essentially reflects a process of specialisation. A cultivator necessarily undertakes a large number of diverse activities in the course of his operation of the farm enterprise. Development induces either some members within the farm households or all the members of certain other households to concentrate on or specialise in a limited number of activities. Researchers need to identify the extent to which these processes are manifest in villages of different size-classes of population and the extent to which different segments of the market become inter-related or interdependent. Simultaneously, we need to understand the pace and processes of growth or decay of different activities in our villages and towns, with due account taken of the place of usual residence as well as place of work of workers. Such mundane research, which may not offer scope for the use of the sophisticated quantitative techniques, is imperative to validate, document and analyse the ongoing changes suggested by the macro-data provided by the censuses and national surveys.

## NOTES

1. National Sample Survey Organisation (1990), "Results of the Fourth Quinquennial Survey of Employment and Unemployment (All India), NSS 43rd Round (July 1987-June 1988)", *Sarvekshana*, Special Number, September 1990, Table 77, pp. S-331-332.

2. Census of India, 1991, Series 1, India, Paper 2 of 1992 - *Final Population Totals: Brief Analysis of Primary Census Abstract*, New Delhi, 1993. The data do not cover the marginal workers, among whom work in a household industry might be more widespread. The workers engaged in household industry formed about 2.2 per cent of the rural workforce, identified in terms of its main activity during the year preceding the census. An additional 2.0 million urban workers (3.2 per cent of the total) were also engaged in household industry.

3. Relative to the population census, the economic census seems to have under-estimated the number of usual non-agricultural workers. Quite likely, a certain number of non-agricultural own-account enterprises and establishments were not enumerated by the economic census. Further detailed research is necessary to identify the various factors that might explain the evident difference between the two estimates of employment.

4. The reference here is to the more populous states, with a population of 5 million or more. Also, the capital territory of Delhi was not a state at the time of the 1991 Census; it was classified as a union territory.

5. Of course, there are also the two other criteria such as the density of population of 400 persons per sq.km (or 1,000 persons per sq. mile) and a population of 5,000 or more. These criteria are applied to localities that do not get classified as towns by virtue of their form of local-self government.

6. Some social scientists have drawn attention to the need to look at the growth beyond the national boundaries in the case of several countries with a large permeable border. The effective urban agglomerations may transcend the national boundaries. See, Rubin-Kurtzman, Kane R. *et al.* (1993), "Demographic and Economic Interactions in Trans-Border Cities: The Southern California-Baja California Mega-City" in International Union for the Scientific Study of Population, International Population Conference, Montreal, Vol. II, 1993, pp. 131-142.

7. The results of the fifth quinquennial survey conducted during 1993-94 are not yet available. The data are yet being processed. Tables are expected to be released during the first quarter of 1996. However, the estimates for India as a whole, based on the small sample canvassed during the annual surveys conducted since 1989-90 are discussed in the text.

8. The number of electrified villages has risen from 1,500 at the end of 1947 to 21,750 at the end of 1960-61; 122,000 (21 per cent) at the end of 1971-72; 271,000 (47 per cent) on March 31, 1981; 412,000 (72 per cent) by March 31, 1987; and 496,000 (86 per cent) by December 31, 1994. See, Centre for Monitoring Indian Economy (CMIE) (1995), *India's Energy Sector*, Bombay, p. 11. CMIE (1981 and 1987), *Basic Statistics Relating to the Indian Economy*, Vol. 1: All India (Table 4.20); Vol. 2: States, Bombay (Table 5.13 and Table 5.11, respectively). According to the 1991 census data, the percentage of rural households with electricity has increased from 14 in 1981 to 31 in rural India.

9. Visaria, Pravin and B.S. Minhas (1991), "Evolving an Employment Policy for the 1990s: What Do the Data Tell Us?", *Economic and Political Weekly*, Vol. 26, No. 15, April 13.

10. The NSS data do not identify the household industry in most of their tabulations. However, the population census data for 1981 and 1991 suggest a fall of the order of 11 per cent from 5.4 to 4.8 million in the number of "main workers" engaged in rural household industry. See Visaria, Pravin (1995), "Household Industries in India in 1991: An Analysis of Census Data" (Unpublished typescript).

11. The 48th Round data collected during 1992 from over 4,200 households are yet to be released. However, the 43rd Round survey of employment and unemployment conducted in 8,375 villages and covering more than 83,300 households found that 11.1 per cent of all rural households were landless in the sense of not owning even a homestead. The figure is very similar to the 37th Round estimate for 1982 of 11.3 per cent of the rural households not owning any land but higher than the 26th Round estimate for 1971-72 that indicated some 9.6 per cent of the rural households to be landless. The 17th Round conducted during 1961-62 had estimated about 11.7 per cent of households as landless. (With the broad similarity of the estimates of landlessness based on four Rounds, one might discard the much higher estimate of landlessness given by the 8th Round conducted during 1953-54.)

According to the 43rd Round, about 3 per cent of households possessed less than 0.005 hectare of homestead land and another 28 per cent of rural households possessed between 0.01 and 0.20 hectare of land.

12. According to the 43rd Round data for 1987-88, the percentage of households without any cultivated land and the percentage of households reporting self-employment in non-agriculture as their major or main source of income in 17 more populous states had a statistically significant negative correlation. The former also showed a statistically significant positive correlation with the percentage of urban population in the state according to the 1991 Census.

13. Vaidyanathan, A. (1994), "Labour Use in Rural India: A Review of Available Evidence", in Pravin Visaria and Rakesh Basant (Eds.) (1994), *Non-Agricultural Employment in India: Trends and Prospects*, Sage Publications, New Delhi.