RURAL NON-FARM EMPLOYMENT IN INDIA: MACRO-TRENDS, MICRO-EVIDENCES AND POLICY OPTIONS

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ABSTRACT

Towards the end of the 1990s, the incidence of unemployment on the basis of CDS (current daily status) has exceeded seven per cent. There are also evidences of deterioration in the quality of rural employment; casualization of rural workers for instance, has increased many-fold. Real wages of rural workers however, increased and the disparity in rural and urban wages also reduced during the 90s. In this context, the present study investigates the nature and pattern of rural diversification in India. The study uses the NSS quinquennial survey on employment to present macro-trends in rural employment; it also utilizes selected information collected by Agro-Economic Research Centres (AERCs) to arrive at certain inferences about the process of rural diversification. Disaggregate level figures shows that both push-and-pull factors have contributed to rural non-farm employment growth; the process of rural diversification in such situations is however, different. The study finally discusses broad strategies to increase rural non-farm employment in the country.

I. INTRODUCTION

The Indian economy grew at an impressive rate in the last decade and demographic pressure also slowed.[1] Yet, the incidence of unemployment (CDS) towards the end of the 1990s was more than seven percent. The situation is especially disconcerting in the rural sector. Employment in rural sector, which is associated mostly with agriculture, has stagnated during the 90s (Jha 2006). Considering the increased pressure on land there exists limited scope for increasing employment in agriculture so that employment in the non-farm sector becomes an important option

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[1] Though the rate of growth of the economy varies depending on the choice of base year and other factors, most of the study finds growth in the economy during the decades of 1990s at around 6 per cent.

Studies also suggest that with the process of development, the share of non-farm income and employment in the total income and employment of the rural households increases in the developing countries.[2] A combination of farm and non-farm income at the household level provides resilience against adverse situations in either of the sectors, though agriculture is known for more frequent adversity. There are also evidences to show that productivity and profitability in the non-farm sector is generally higher than in the farm sector; as are the average wages and working conditions that obtain in the non-farm sector (Fisher *et al.* 1998). A greater reliance on the non-farm sector would therefore provide a demand-pull to rural economy and also ensure welfare for rural workers.

In India, economic opportunities in the non-farm sectorhave also increased.[3] A comparative account of the non-farm sector in the rural *vis-à-vis* the urban sector however, shows significant disparity in terms of its size and growth.[4] The lopsided nature of growth of the non-farm sector is causing a problem of rural - urban migration. The small base of the rural non-farm sector located within a large rural population is in fact indicative of the employment potential in the rural non-farm sector (RNFS). Achievement of employment growth as per its potential may require a more favourable policy environment; and the present study attempts to search for these policy options. The study of rural diversification with the objective of ensuring a proper policy match requires first an understanding of the pattern of farm and non-farm employment in the rural sector; Section II of this paper discusses macro-trends in rural employment.

The rural non-farm sector (RNFS) encompasses all non-agricultural activities: mining and quarrying, household and non-household manufacturing, processing, repair, construction, trade and commerce, transport and other services in villages and rural towns undertaken by enterprises varying in size from household own-account enterprises to

[2] Though proportion of household income separately available from the agriculture and non-agriculture sector varies across regions, the studies have generally found that non-farm activities on an average contribute between 25 and 35 percent of the total household income in rural India.

[3] The non-farm sector is loosely referred to as the unorganized sector; and the Ninth Five-Year Plan document says that more than 90 per cent of employment growth during the 1990s was from the unorganized sector.

[4] In rural India, non-agriculture industries under the unorganized sector employ only one-half of the work force that it employs in the urban sector; the corresponding figures for rural and urban sector are roughly 11 per cent and 22 per cent respectively of the total workforce in the country. The rate of growth of employment in the rural unorganized sector is significantly lower as compared to the urban unorganized sector.

factories.[5] The RNFS thus comprises diverse activities while sustained growth in the RNFS depends on a varied set of factors, depending on the kind of impetus, positive or negative, that these factors provides to the rural economy RNFS will experience development- and distress- related rural diversification. Section III of this paper discusses rural diversification, its determinants and implications for the rural people. For a better understanding of rural diversification it is necessary to study the participation of rural households in particular non-farm activities; the motivation behind the decisions as well as the ability of the households to participate in these. Section IV attempts to illustrate these points, from the evidence of the survey of Agro-Economic Research Centres (AERCs) spread across the country.

The state plays an important role in encouraging positive rural diversification. The rural economy includes several heterogeneous rural activities having different demand and supply conditions in their input and output markets. Government policies therefore, in most of the cases are industry specific. In a labour surplus country like India, the government also has a role to play in regulating and mediating in the rural labour market. The present study in Section V reviews some of the government policies that have a direct bearing on the intensity and quality of employment in the rural sector.

II. RURAL EMPLOYMENT: SOME MACRO TRENDS

In this section, an effort has been made to understand the pattern of rural non-farm employment at aggregate and disaggregate levels using the National Sample Survey (NSS) quinquennial data on employment. The study also utilizes Economic Census data from the Central Statistical Organization (CSO). Previous studies related to the rural non-farm employment suggest that construction, trade, and transport have emerged as the engine of rural employment growth; these industries together account for only 11 per cent of the rural workforce. Can these industries with such a small base sustain the growth of the rural non-farm employment in a country such as India? How have women benefited in terms of employment growth in the rural non-farm sector is another question that this section attempts to answer.

[5] Often, towns with population less than 50,000 are referred as rural towns.

Table 1 presents a comparative account of employment trends for nine major industrial categories. This table shows the annual compound growth rate (ACGR) of employment (on the basis of CDS) in the rural and urban sectors during the reference periods (1983-94 and 1994-2000). Though the share of agriculture in the economy has declined during the planned development of the country, it still assumes a pivotal role in the rural economy since three-fourths of the rural work force is dependent on it. The bulk of employment in agriculture is rural-based (97 per cent) and it is astonishing that rural employment growth in agriculture is abysmally low (0.06 per cent) [6] and insignificant during the 90s (see Table 1). The corresponding growth was moderate and significant (1.1 per cent) during the 80s. It is however interesting that the growth of agricultural income during the 90s is higher (0.02 per cent) than in the 80s. These trends suggest job-less growth in agriculture during the 90s. An enquiry into the pattern of growth in agricultural income suggests that growth in agricultural income during the 90s is largely because of value addition in agriculture (Jha 2006). Whereas, intensity of employment in agriculture depends more on cropped area and crop area indices have decreased during the 90s.[7] Further, livestock which has emerged as an important source of rural employment during the 80s has undergone structural changes, as the livestock population in fact declined. The recent livestock census shows that population of cattle and goat has declined after the mid-90s. As a matter of fact, rearing of cattle and goat is highly labour intensive; a decline in absolute number of population suggests decline of employment in the livestock sector.

The annual compound growth rate (ACGR) of employment in the non-agricultural sector, unlike for agriculture, has been positive and significant during the 90s; this has held true for both rural and urban sectors. The ACGR of employment in the non-agriculture sector during 1994-2000 has been less than in the previous reference period, 1983-1994. The non-agriculture industrial categories where employment growth during the 90s was positive and also higher than in the previous reference period were manufacturing, construction, trade, transport, and business services. This trend in employment growth was slightly different at the level of the rural and urban sectors. In the urban sector, manufacturing, trade, transport and business services were the industries where employment growth during 90s

[6] This change is observed at the third decimal place only.

[7] For details, see Agriculture Statistics at a Glance, 2004 , a Government of India publication.

was higher than in the previous reference period; while in the rural sector, construction, transport and business services, recorded a higher growth during the 90s as compared to the previous decade. It must be noted that the base of these industrial categories in the rural sector was very low.

Table 1: A Comparative Account of Growth in Employment and Income for selected Industries / Industry-groups during 1980s and 90s

Industries	ACGR in Employment				ACGR in Income		Employment Elasticity	
	1983-94		1994-00		1983-94	1994-00	1983-94	1994-00
	Rur	Urb	Rur	Urb				
Agriculture & allied	1.13	2.33	0.06	-1.58	1.22	1.24	0.95	0.01
Mining & quarrying	1.47	1.47	0.27	-1.56	2.61	2.21	0.56	-0.04
Manufacturing	0.89	0.85	0.84	1.32	2.52	3.10	0.34	0.35
Utilities	0.41	0.67	-0.08	-1.22	3.51	2.92	0.16	-0.26
Construction	1.03	3.11	2.28	2.61	2.1	2.67	0.82	0.89
Trade+Hotels & Restr.	1.67	1.88	1.22	4.31	2.36	3.81	0.76	0.82
Transport+storage+com.	1.16	1.01	2.93	1.92	2.57	3.89	0.43	0.59
Fin+Insu+RE+B. servics	1.18	1.62	1.90	2.72	4.18	3.48	0.36	0.73
Com+Social+Pers. servi	0.66	1.93	-0.63	-2.40	2.40	3.37	0.59	-0.47
Non-agriculture	1.03	1.57	0.91	1.24	2.7	3.39	0.48	0.32
Total	1.11	1.64	0.26	0.99	2.19	2.79	0.54	0.16

***Note**:* These estimates have been worked out with the Current Daily Status (CDS) figures of employment from the NSSO and income figures from the CSO, New Delhi.

In manufacturing, employment growth during the 80s was similar in both the rural and urban sectors; disparity in the rate of growth between these sectors has surfaced in the 90s. The possible reasons for disparity in the rural and urban rate of growth of employment in manufacturing during the 90s are as follow: (a) burgeoning gap in rural and urban infrastructure facilities with regard to assured power and telecommunications; (b) increasing focus on cost-competitiveness with trade liberalization which discourages rural manufacturing that is generally small scale in either the organized or unorganized categories; (c) uncertain policy environment for small-scale industry has also discouraged some village resource-based manufacturing activities in the rural sector; and (d) with trade liberalization and growing consumerism the relative importance of goods produced in the urban sector has increased even for the rural masses. [8]

[8] Harris (1984) reported increase in relative importance of goods produced in metropolitan factories in the consumption basket of rural consumers.

A detailed study by Uma Rani *et al.* (2004) lists reasons for particular trend of employment and income in the manufacturing sector. The study found that in manufacturing activities undertaken in the organized and unorganized sectors during the years 1984-1999 the growth of employment, value-addition and capital in the organized manufacturing sector has grown during 1984-95 and declined subsequently.[9] The unorganized sector presents a different trend. Growth in this sector has peaked up during the 1984-90, flattened during the 1989-95 and surged ahead in subsequent years (1995-00) following the adoption of promotional policies towards unorganized segments of small-scale industries.[10] This growth has been particularly high for the organic as compared to the inorganic manufacturing units.[11] It is significant that organic manufacturing is mostly village resource-based and with favourable infrastructures for manufacturing in the rural sector, organic manufacturing industries can be attracted.

Employment growth in construction peaked during the 90s, though it was fairly high (1.75%) even in the 80s. In the urban sector, construction activity has peaked early (in the 80s) while in rural India a high growth was experienced during the 90s. The extension of basic infrastructure like roads in rural India might have encouraged employment growth in rural construction during the 90s. A state-wise analysis of data would throw light on the possible factors favouring the robust growth in construction activity. Certain economic policies might also have encouraged construction activities in the 90s.[12]

Transport-storage-communication (TSC) and finance-insurance-real-estate-business (FIREB) services are the industrial categories where employment increased in both the rural

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[9] This study on the basis of availability of data for unorganized manufacturing has divided the reference period (1984-00) into three phases, first phase is the initial period of partial liberalization (1984-89), the second and third phases, 1989-94 and 1994-00, respectively are the reform periods.

[10] Examples of promotional policies in recent years are increase in investment limits for small-scale industries to infuse technology and increase scale economy in small-scale industries.

[11] The organic manufacturing units referred here are NIC14 - NIC22, while inorganic manufacturing units are commodities classified under NIC-23 to NIC36. (NIC refers to National Industries Classifications)

[12] Favourable policy environment for cement and other building construction industries and the consequent fall in the relative price of these commodities has encouraged construction activity after the mid-80s. Introduction of tax incentives in house loans towards the end of the 90s is another example of incentives for promotion of construction activity.

and urban sectors. Employment in TSC appears to be more influenced by increased investment in infrastructure such as roads which are being prioritized in recent years. Increased investment in infrastructure increases the quality of real estate and consequently, the income and employment in real estate. This in turn has spread effects on the growth of business services. Trade, hotels and restaurants (THR) are the other industrial categories where employment growth was positive and significant in both the sectors, though the rate of growth was higher in the urban sector.

In the 90s, employment growth was negative in mining and quarrying, utilities and community services. These industries largely fall within the domain of the public sector. Since there is already an effort to downsize the role of the public sector, a decline of employment in these industrial categories is obvious. Incomes in these sectors are in fact salaries and with an implementation of the Fifth Pay Commission recommendations during the late 90s, salary in this industrial category has increased. In mining, the decline in employment could also have been accentuated because of the strict environmental regulations and an increased focus on clean technologies. Strict environmental regulations have in fact, caused the closure of many mining units. Again the focus on cleaner technology, which essentially means a greater use of gas and oil-based technology rather than coal, has discouraged the production of coal. As a matter of fact, coal is labour-intensive while gas and oil is capital-intensive; so this substitution could also have caused a decline of employment despite increase of income in mining.

The above discussion suggests that growth of employment in agriculture plateaued, though agricultural income has grown during the period. Job-less growth in agriculture is on account of value-added growth in this sector. A continuous process of transformation from subsistence to a commercial mode of production in agriculture and livestock has also contributed to this trend. Manufacturing, which is another source of employment growth, was also insignificant in the rural sector in the 90s. Employment growth in the rural sector was propelled by construction, trade, transport and business services. It is interesting to note that employment intensity in these industrial categories also increased during the 90s. These industrial categories however, account for only 11 per cent of rural employment; therefore employment intensity in the non-agriculture sector could not increase during the 90s.

Rural Employment Trends in States

The above discussion gives a comparative account of employment for major industries at the aggregate level. Certain trends, which were evident at the aggregate level, may emerge robust with the help of state-level information. Table 2 presents the share of different industries in rural employment across states during the reference period (1983 and 1999-2000). Table 2 shows that over a span of 17 years, the share of agriculture in rural employment has declined by only 2 per cent at the aggregate level. There are mixed trends from the states; the percent share of agriculture has not declined in the states of Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra and Orissa. The reasons for non-decline of rural employment in agriculture could be different for these states. In certain states like Bihar and Orissa, a dearth of opportunity in the non-agricultural sector could have pushed rural workers towards agriculture whereas in states like Maharashtra the pull factor could have attracted the rural workforce in agriculture. These issues need further probing.

In the non-agriculture employment categories, manufacturing is the most important, accounting for more than 7 per cent of rural employment in the country. With economic development, one would expect manufacturing to become more important in the rural sector; however there is only a marginal increase in its share during the reference period. The share of manufacturing in rural employment has in fact declined in some states like Andhra Pradesh, Bihar, Goa, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Punjab; whereas, in Assam, Delhi, Gujarat, Haryana, Tamilnadu and West Bengal, the share of manufacturing has increased during the reference period.

Though the reasons responsible for these trends may be different for different states; changes in infrastructures to a large extent explain these trends. In the latter group of states, rural infrastructure has increased significantly during the reference period. This does not necessarily mean that the rural infrastructure in the earlier group of states is poor. A significant increase of rural infrastructure in these states might not have taken place during the reference period. There is evidence at least from Punjab to suggest that even with relatively better rural infrastructure, manufacturing activities have shifted away from the rural sector. It may be noted that the rural sector here is defined on the basis of census classification rather than the revenue records. Urbanization and better infrastructure facilities like assured power could also have lead to this situation.

The state of Delhi presents a different pattern of growth in which rural manufacturing has increased significantly. The developed world arguments to justify manufacturing in the rural sector as for example, low cost of living, etc, in the rural sector probably hold good for Delhi. While the difference in rural and urban infrastructure from the view-point of manufacturing is not there in Delhi; nevertheless, manufacturing activities in the rural sector of Delhi has certain advantages; these units escape some regulations imposed by municipal corporations.

The utilities (consisting of electricity, water), mining and quarrying are the employment categories not very important from the rural employment perspective. Both these categories registered negative growth during 90s at the aggregate level. The share of mining in rural employment has however increased at the aggregate level, whereas the share of utilities in rural employment like its share at the aggregate level has declined.

Construction has provided an important impetus for the growth of rural employment; its share in most of the states barring Karnataka, Madhya Pradesh and Maharashtra has increased. The states of Bihar and Orissa, which have not performed well otherwise have done well in construction. It appears that population pressure in these states accompanied by a favourable policy environment for building construction material during the reference period has encouraged construction activity. There can be other reasons such as increase in per capita income for improved construction activity in the country.

Trade is another industry group, in which evidence of rural employment increase is apparent for most of the states. The states of Andhra Pradesh, Orissa and Tamil Nadu were exceptions. The share of transport in rural employment has increased for all the reference states. The creation of basic infrastructure like roads is obviously increasing in recent years in the rural sector; subsequently rural employment in transport has also increased.

Services in rural employment are grouped into two categories namely; community social and personal (CSP) services, which largely fall under the domain of the public sector; while finance insurance real estate and business (FIREB) services are subsumed under the private sector. The share of CSP services in rural employment has also declined in the country, though Assam was an exception. It may be noted that in the recent decade there has been a greater focus on the North-Eastern states including Assam, which may have led to an increase in the share of CSP services. The share of CSP services in rural employment also

might have declined on account of a rural-urban classification in the census as well. There is a possibility that with an increase of rural employment in the community social and personal services of a place, the population around that place increases and with an increase of population beyond 5000, the village (rural) gets reclassified as town (urban) sector.

The share of FIREB services in rural employment has increased marginally at the aggregate level; though this has emerged as important for some states such as Andhra Pradesh, Bihar, Gujarat, Haryana, Kerala, Maharashtra, Rajasthan. The share of FIREB services has also declined in many states like Delhi, Goa, Karnataka, Orissa and West Bengal. There could be a variety of reasons that vary across states for this decline in the share of FIREB services. Increase of employment in FIREB services requires slightly different kinds of skill and infrastructure, for example, better literacy, more communication-related infrastructures. Basic infrastructure like roads is almost a precondition for the growth trajectory of the non-agriculture sector to take-off.

The nature and pattern of rural employment across states, shows that various independent factors influence employment in the non-agricultural sectors. Demography or population pressure for instance, influences construction activity, while rural literacy in general promotes FIREB services. The study found that employment in trade and transport is highly correlated and is more influenced by basic infrastructure such as roads. The expansion of rural roads appears to both increase rural employment in trade and transport, while there is also evidence that availability of roads encourages employment of skilled rural work-force in urban centers in selected industries like manufacturing and business services. Infrastructure as such is important for employment in most of the industrial categories. The kind of infrastructure however, varies across industries; for instance, employment in manufacturing requires more of assured power /electricity; while employment in transport and trade requires basic infrastructure like roads; employment in finance-insurance-real estate-business services require more of communication- related infrastructures.

Box I: Correlation Coefficients between Variables during the Year 1999-00 and also between the Changes in Variables during the period 1983-99

Variables	1999-00	1983-99
Construction & PCI	0	0.21
Constr. & Popln.dens.	0.15	0.57
Trade & Road	0.28	0.44
Trade & Literacy	0.67	0.42
Trade & Transport	0.91	0.43
Transport & Road	0.41	0.86
FIREB serv. & Road	0.21	0.14
FIREB & Literacy	0.69	0.61

Table 2: Changing Proportion of Industries in Total Rural Employment During the Reference Years in Important States of India

State	Agriculture		Mining & Q'rying		Manufacture		Utilities		Construction		Trade & hotels		Transport etc		FIREB services		CSP services	
	1983	'99-00	1983	'99-00	1983	'99-00	1983	'99-00	1983	'99-00	1983	'99-00	1983	'99-00	1983	'99-00	1983	'99-00
Andhra Pradesh	74.93	77.24	0.83	0.91	8.81	6.45	0.11	0.06	2.23	2.65	4.69	4.51	1.64	1.92	0.19	0.27	6.57	6
Assam	78.95	69.91	0.13	0.45	2.89	3.99	0.2	0.06	1.1	1.58	5.57	7.69	1.46	2.76	0.38	0.37	9.31	13.2
Bihar	81.59	81.54	1.1	0.83	6.03	5.5	0.15	0.05	1.32	2.29	3.88	4.16	0.97	1.38	0.12	0.25	4.85	4
Delhi	40.08	15.92	0	3.71	10.08	27.3	0	0.42	0.52	6.43	4.96	22.74	6.32	6.61	1.9	0.38	36.13	16.49
Goa	31.82	27.3	10.34	5.16	19.51	11.76	2.06	0.25	4.99	11.87	6.31	19.73	4.99	9.44	1	0.64	18.99	13.84
Gujarat	82.67	77.21	0.18	0.67	5.37	7.16	0.15	0.25	1.68	3.32	2.6	4	1.21	2.53	0.24	0.45	5.9	4.42
Haryana	73.01	68.24	0.69	0.48	5.01	7.76	0.35	1.12	3.46	6.27	4.13	5.4	2.33	3.66	0.2	0.85	10.82	6.23
Himachal Pradesh	82.42	74.97	0.3	0.23	3.6	3.74	0.57	1.03	5.04	8.38	1.25	3.14	0.73	2.5	0.3	0.36	5.79	5.65
Karnataka	80.43	80.8	0.7	0.71	6.73	6.39	0.09	0.04	2.82	1.6	3.91	4.84	0.88	1.66	0.59	0.33	3.85	3.62
Kerala	54.61	46.07	1.19	1.33	14.94	13.51	0.6	0.23	2.9	7.55	8.12	13.37	3.82	6.15	1.31	2.21	12.52	9.59
Madhya Pradesh	86.61	86.43	1.22	0.81	4.33	4.02	0.1	0.09	2.01	1.8	1.79	2.76	0.37	0.71	0.12	0.15	3.45	3.23
Maharastra	78.5	79.74	0.29	0.21	5.98	5.34	0.35	0.26	5.3	3.15	3.04	3.94	1.1	2.2	0.28	0.49	5.16	4.65
Orissa	74.33	76.29	0.64	1.09	8.29	8.19	0.09	0.14	2.57	4.81	5.43	4.36	0.68	1.01	0.52	0.13	7.45	3.99
Punjab	75.68	72.19	0.05	0.28	6.9	6.4	0.86	1.06	2.59	4.73	3.71	5.96	2.94	3.46	0.35	0.41	6.93	5.52
Rajasthan	84.51	77.39	0.55	1.52	4.37	4.51	0.32	0.17	3.89	7.43	2.04	3.67	0.87	1.91	0.08	0.31	3.36	3.11
Tamilnadu	70.27	67.37	0.64	0.48	11.23	14.42	0.36	0.23	2.61	4.16	5.43	5.35	1.64	2.44	0.61	0.62	7.22	4.93
Uttar Pradesh	80.01	77.74	0.08	0.42	7.02	7.17	0.12	0.11	1.97	3.14	3.32	4.95	1.53	1.91	0.13	0.27	5.82	4.29
West Bengal	69	64.74	0.79	0.44	10.2	14.64	0.19	0.11	2.47	2.73	5.92	8.91	2.8	3.18	0.44	0.4	8.2	4.84
India	77.55	75.89	0.62	0.67	7.17	7.37	0.22	0.18	2.63	3.42	3.9	5.07	1.44	2.1	0.3	0.39	6.17	4.92

Source: Per cent figures calculated from employment (CDS) data published by NSSO

Gender Aspects of Rural Employment

The gender dimension in rural employment has become important in recent decades following growing concerns about the deteriorating status of females in a society. In all major industrial categories, males dominate by accounting for around 70 per cent of rural employment. The bulk of female workers are concentrated in agriculture, manufacturing and community services. Table 3 therefore, presents a gender-wise proportion of rural workers in these industrial categories for the important states of India. Like previous comparisons, this state-wise information also spans the period between 1983 and 1999-00. It is evident from Table 3 that approximately 30 per cent of the rural work force is female at all industry levels. The corresponding share has increased marginally (0.5 per cent) at the aggregate level during the reference period. Industrial category-wise gender proportions indicate that females are concentrated more in agriculture followed by manufacturing and community services. The proportion of females in these industrial categories has increased significantly; by more than 2 per cent in agriculture and community services while less than 2 per cent for manufacturing at the all India level.

Table 3 indicates that the trend in gender-wise employment in many states is different from that of the country. In agriculture for instance, the proportion of females has declined in Bihar, Madhya Pradesh and West Bengal. Amongst these in Bihar and Madhya Pradesh the share of agriculture in rural employment did not decrease during the reference period; this suggests that pressure on agriculture for rural employment is quite high and in this kind of situation males are generally preferred over females for employment. This reason does not hold good for West Bengal as this has experienced a spurt in agricultural growth during the 80s, though this growth tapered off in subsequent years. Since participation of females is often specific to particular agricultural operations any significant change in the structure of agriculture and allied activity can also change woman's share in agriculture.

In community social and public services, though the share of females in rural employment has increased at the aggregate level, the corresponding share has not increased in the states of Assam, Haryana, Orissa and Rajasthan. These states barring Assam and Rajasthan have registered a sharp decline in the share of CSP services in rural employment. Since the bulk of employment in CSP services is under the organized sector, this is

considered better than many other employment categories for workers of similar qualification. In this situation, competition for getting employed in this category increases and probably males dominate in this competition since the difference between genders in human development related statistics like literacy is sharper in these states.

In manufacturing, an increase in the share of females at the all-India level was observed, the corresponding share declined in the states of Delhi, Goa, Haryana, Punjab, Gujarat, Maharashtra, Karnataka and Himachal Pradesh. As many of these states have a good road infrastructure, there is a possibility that urban manufacturing units are doing well with the provision of cheap labour from the rural sector to these manufacturing units; while males have it appears, some distinct advantages over females in commuting from rural to urban places.

The share of females in the total rural employment has increased marginally during the reference period. Many states in fact report a decline in the share of females in the total rural employment; some of these states are Bihar, Madhya Pradesh, Rajasthan, Delhi, Goa, Haryana and Kerala. These states present different reasons for a decline in the share of female employment. The first group of states suggests push factors as possible reasons for a decline in the employment share of females whereas the latter group of states suggests urbanization and a high mobility of the work force as possible reasons for a decreasing share of females in rural employment. The share of females in rural employment has increased in relatively well-off states.

It must be noted that the proportion of females in the total rural employment has increased (0.52%) marginally; though the corresponding share has increased significantly in agriculture, manufacturing and community services. This difference in the temporal share of females in rural *vis-à-vis* gender-wise important industrial categories like agriculture, manufacturing and community services suggests that in rural India the share of females in industries other than the above has declined. In this regard too, varying trends from different states are present.

Quality of Rural Employment

The quality of employment is as important as the quantity and in the rural sector disguised unemployment is probably the most important issue while discussing the quality of rural

employment. The NSS data presents a comparative account of usually employed persons and persons employed on the basis of current daily status (CDS) during a year; the difference in the level of employment reveals disguised unemployment in the rural sector.

Disguised unemployment here means that persons employed on the basis of their usual status are not getting employment for a sufficient number of man days to be termed as employed on the basis of current daily status (CDS). Table 4 presents the per cent distribution of usually employed persons by their broad CDS of employment. This information is available separately for males and females in the rural and urban sectors of India. The table indicates that out of one hundred usually employed rural males more than 10 per cent of rural males were either unemployed on the basis of CDS or are not in the labour force during the year 1999-2000. A comparison of underemployment across categories of workers in Table 4 suggests that underemployment is the highest for rural females. It may be noted that women are often employed for specific agricultural operations like harvesting, manual weeding, etc; women's employment on these accounts may be less frequent as compared to male and this is manifest as high disguised unemployment for females.

The relative proportion of different categories of workers, self-employed, regular and casual also explains the quality of employment. The present study assumes that with an increase in the proportion of casual workers in the total work force, the quality of employment decreases since social security measures for casual workers are less effective in the country. Table 5 presents the per cent distribution of usually employed workers under different categories of employment during the reference years. It is evident from the table that in 1999-2000, in the rural sector, a large proportion of the male (54.4%) workforce is self-employed, the group of casual workers is a distant second while regular employed workers account for only a small proportion (9%) of the total workers and occupies the last place. The urban sector presents a different picture, the regular employed is the most dominant class of worker closely followed by the self-employed workers; casual workers are the least important in terms of their proportions. Across gender, the problem of casualization is more acute for females, especially, the rural female. A temporal comparison of employment categories suggests that casualization, that is, the per cent of casual to regular employed workers, is on the rise. Table 5 further shows that the proportion of self-employed

workers in the rural sector has declined while its share in the urban sector has increased during the reference period. It must be noted that self-employed workers are associated more with the own account enterprises; and in this context the above trend is important and warrants further probing.

The quality of employment is often influenced by enterprise type, for instance, an enterprise employing more than 20 workers is covered under the Factories Act, 1948 and this Act to some extent protects employee's interests. It may be noted that the quality of employment is better for salaried workers, and the proportion of salaried workers increases with the size of enterprises. Enterprise trends would generate more evidence about the pattern of rural employment in the country.

There can be different ways of classifying enterprises. On account of social security provisions for its workers, enterprises are of two types; one, organized sector enterprises which include factories that have better social security provisions; while the unorganized sector consists of smaller enterprise that are devoid of satisfactory social security provisions.[13] Enterprises classified on the basis of the number of persons hired are own account enterprises (OAEs) and establishments. Again establishments identified on the basis of number of people hired are Directory and Non-directory enterprises; these enterprises vary on the basis of type of regulations. Enterprises can be further classified on the basis of location namely; rural and urban; and type of activities being performed namely; agricultural and non-agricultural enterprises. The present study discusses the trend in enterprises on the basis of the above criteria. Enterprise-level information is obtained from the Economic Census, and is available for the years 1980, 1990, and 1998. The Economic Census does not include enterprises engaged in crop production and plantations.

Table 6 presents the distribution of agricultural and non-agricultural establishments by size class of employment at the aggregate level. The table suggests that even in the rural

[13] Enterprises on the basis of scale and applicability of social security provisions for its workers are of two types, organized and unorganized. The organized sector encompasses all the enterprises, which employ 10 or more workers with or without using power and 20 or more workers without using power. Enterprises, which employ workers less than the above numbers also require less mandatory social security provisions for its workers and are generally referred as the unorganized sector. The unorganized sector again depending on the number of workers it employs are of following categories; (i) OAMEs are the household-manned enterprise which at times may engage other family members to run the enterprises; (ii) NDMEs are the enterprises which employ up to five workers of whom at least one is hired; (iii) DMEs are those enterprise, which employ 6-9 workers with or without using power and 10-19 workers without using power.

sector, non-agricultural enterprises in terms of number of units and persons employed are many times (12-18 times) higher than for agricultural enterprises. In the urban sector the difference between agriculture and non-agricultural enterprises is even higher. As far as distribution of enterprises according to the size-class of employment is concerned, agriculture and non-agriculture enterprises are similar in both the sectors, rural and urban. The difference between these enterprises becomes significant when the distribution of employment in various size classes of enterprises is taken into account. In non-agricultural enterprises, the concentration of employment is higher (33.6%) towards larger establishments; this trend is more pronounced in the case of the urban sector. This particular trend explains the presence of high regular / salaried workers in the urban sector.

The per cent share of non-agricultural enterprises and its trend during the last three economic surveys 1980, 1990, and 1998 suggests a trend almost similar to that of the NSSO quinquennial survey on employment. In rural enterprises, the per cent share of construction, trade, transport and business services has increased, while the share of manufacturing enterprises has declined in both the sectors (Jha 2005). Even though the number of enterprises is on the rise, for the sake of quality of employment one would expect that the average size of enterprises should grow. Data from the Economic Census however, do not support this hypothesis (Jha 2005).

Pattern of Wages and Salaries

The wages and salaries to some extent explain the productivity of labour in different sectors and in the economy. The trend in labour productivity across industries and over the years can be studied by comparing real wages in these sectors during different years. Thus, real wages for an average illiterate employee by industry, sex and sectors for the selected years, 1987-88, 1993-94 and 1999-00 are presented in Table 7. The real wage is obtained by dividing daily wage / salary as obtained from various NSS round surveys with the consumer price index of agricultural workers (CPIAL) for the corresponding years.

Table 7 clearly shows that the average wage for a male worker is significantly higher than that of the female worker for most of the industrial categories; this difference in wages is at a maximum in the manufacturing sector. The wage difference appears to be related to the differences in the productivity of male and female labour in these industrial categories. A

higher wage for female workers in certain employment categories as that of transport and storage, agriculture in the urban sector may be ignored on account of the small sample size for these specific categories of workers.

In rural India, the growth of real wages across industries suggests different trends. This growth in real wages is based on three points of time, namely, 1987, 1993, and 1999. Agricultural wages have grown at a faster rate as compared to the non-agriculture wages during the first period (1987-93), whereas growth in non-agriculture wages has been higher than agricultural wages during the later period (1993-99). This trend has probably a lot to do with the real performance of the respective sectors during the reference periods. Several indices related to agriculture suggest that performance of agriculture was better during the earlier period. A comparison of real wages during the entire period (1987-99) suggests that rural wages in agriculture, construction and trade doubled during the reference period. Certain studies also report an abrupt increase in agricultural wages during the late 80s. A relatively higher increase in real wages for these industrial categories might also have been because of an abnormal base year (1987-88).[14]

A comparison of male wages between rural and urban sectors shows higher urban wages for most of the industries. The real wage in the urban sector was significantly higher than for the rural sector during the year 1993-94. This difference in wages was only marginal for most of the industries during the year 1999-00. Given the general belief that wages in the rural sector are low as compared to the urban sector, this trend is alarming. The real wage for agriculture in the urban sector and that of non-organic manufacturing in the rural sector is significantly higher than its counterpart during the year 1999-00. These extreme cases may be ignored since the sizes of samples in these instances are too low.

Analysis of wages and salaries suggests that real wages have increased uniformly in all the employment categories during the reference period (1987-1999). In most of the employment categories, the real wage in the rural sector was significantly lower than for the urban sector in the early 90s; the difference in wages between the rural and the urban sectors has however tapered-off in non-agriculture employment categories during the year 1999-00, negating the general belief that rural wages are significantly lower than the urban wages.

[14] The year 1987-88 was a drought year and lower rural wages in this year on account of adverse weather conditions cannot be ruled out.

Table 3: Changing Proportion of Males in Rural Employment for Important Industries across States in India

State	Agriculture		Manufacture		CSP services		Total rural Employment	
	1983	1999-00	1983	1999-00	1983	1999-00	1983	1999-00
Andhra Pradesh	61.99	57.96	61.39	56.9	68.94	62.3	63.66	60.66
Assam	87.83	80.9	78.95	58.57	83.8	90.5	87.86	83.72
Bihar	77.31	79.11	72.57	71.66	84.56	83.27	78.04	80.27
Delhi	63.67	90.71	88.48	95.12	92.32	90.48	81.19	93.57
Goa	56.76	70.87	65.26	88.49	80.58	62.33	70.37	80.01
Gujarat	62.99	60.47	83.54	93.6	85.88	84.82	67.09	67.06
Haryana	78.76	75.27	92.58	98.08	85.98	98.34	81.99	83.33
Himachal Pradesh	55.04	47.94	91.93	98.1	90.76	90.46	62.33	61.91
Karnataka	66.77	63.15	58.05	60.92	82.9	77.35	67.98	65.79
Kerala	74.45	72.99	58.09	53.85	61.76	55.41	73.56	75.33
Madhya Pradesh	62.5	63.74	68.19	64.22	87.38	76.95	64.5	65.55
Maharastra	58.15	54.56	78.35	83.54	84.03	81.77	62.24	60.75
Orissa	75.39	72.9	66.47	54.53	79.14	81.77	74.85	73.41
Punjab	89.76	70.96	84.6	92.16	87.64	76.92	90.2	79.69
Rajasthan	57.44	57.29	79.4	75.05	85.78	87.12	61.28	64.74
Tamilnadu	61.78	58.08	63.34	61.17	70.99	63.44	65.12	62.08
Uttar Pradesh	77.85	77.27	84.05	82.23	88.9	84.86	79.94	80.34
West Bengal	87.6	88.43	73.68	61.91	80.72	76.89	86.03	85.38
India	69.82	67.81	71.64	70.48	80.76	78.28	71.96	71.44

Source: National Sample Survey Organization (NSSO), 1990, 1997, 2001.

Table 4: Per cent Distribution of Usually Employed (Principal + Subsidiary) by their Broad Current Daily Status (CDS) of Employment during the year 1999-00

Current daily status (CDS)	Rural male		Rural female		Urban male		Urban female	
	1999-00	1993-94	1999-00	1993-94	1999-00	1993-94	1999-00	1993-94
Employed	89.7	90.9	67.6	66.4	94.2	94.8	79.1	76.6
Unemployed	5.2	4.0	4.1	3.0	2.7	2.7	2.2	2.4
Not in labour force	5.1	5.1	28.3	30.6	3.1	2.5	18.7	21.0
All	100	100	100	100	100	100	100	100

Source: NSSO (1997); NSSO (2001).

Table 5: Per cent distribution of Usually - Employed (Principal status) under different Categories of Employment in Various NSS Rounds

Category	Sex	1983		1987-88		1993-94		1999-2000	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Self-employed	Male	59.5	40.2	57.5	41.0	56.7	41.1	54.4	41.2
	Female	54.1	37.3	54.9	39.3	51.3	37.2	50.0	38.4
Regular employee	Male	10.6	44.5	10.4	44.4	8.7	42.7	9.0	41.9
	Female	3.7	31.8	4.9	34.2	3.4	35.5	3.9	38.5
Casual labour	Male	29.9	15.3	32.1	14.6	34.6	16.2	36.6	16.9
	Female	42.2	30.9	40.2	26.5	45.3	27.3	46.1	23.1
Casualization index (%)	Male	282.1	34.4	308.7	33.0	397.7	37.9	406.7	40.3
	Female	1140.5	97.2	820.4	77.5	1332.4	77.3	1182.1	60.0

Note: Casualization is per cent of casual workers to regular employed workers. *Source*: NSSO (2001).

Table 6: Distribution of Agriculture and Non-Agriculture Establishments by Size-class of Employment in Rural and Urban Sector in the Year 1998

Estab types & Sectors	Parameters	Absolute numbers	One-two	Three-five	Six-nine	10-19	20 & above
Rural							
Agriculture	Est. units	3144	46.1	40.9	9.2	3.0	0.8
	Empl (US)	11504	21.6	41.0	17.3	10.1	10.1
Non-agriculture	Est. units	37923	60.0	28.2	8.3	5.1	2.6
	Empl (US)	179557	18.7	21.8	12.3	13.6	33.6
Urban							
Agriculture	Est. units	575	38.3	45.1	11.1	4.3	1.2
	Empl (US)	2447	16.4	38.9	18.0	12.4	14.2
Non-agriculture	Est. units	48089	39.7	39.5	10.9	6.2	3.7
	Empl (US)	317088	11.0	21.8	11.6	11.8	43.8

Note: Economic Census (CSO, 2001).

Table 7: Real wage / Salary Earnings for an Average Illiterate Employee by Industries, Sex and Sector (in Re. per day at 1986-87 price)

Industry division	Rural 1999 - 2000		Rural 1993 - 94		Rural 1987 - 88		Urban 1999 - 2000		Urban 1993
	Male	Female	Male	Female	Male	Female	Male	Female	Male
Agriculture (01-05)	0.145	0.127	0.111	0.108	0.068	0.086	0.183	0.199	0.167
Manufacture (15-27)	0.244	0.098	0.149	0.080	0.137	0.041	0.243	0.116	0.217
Manufacture (23-37)	0.300	0.147	0.219	0.110	0.172	0.081	0.256	0.235	0.238
Construction (45)	0.287	0.190	0.216	0.130	0.126	0.065	0.296	0.156	0.271
Trade (50-55)	0.206	0.357	0.121	0.080	0.085	0.042	0.207	0.162	0.161
Transport & stor (60-64)	0.316	0.364	0.227	0.000	0.165	0.117	0.325	0.393	0.270
Services (65-74)	0.267	0.318	0.126	0.017	0.232	0.161	0.269	0.176	0.220
Services (75-93)	0.363	0.141	0.195	0.073	0.197	0.124	0.390	0.248	0.231

Source: National Sample Survey Organization (NSSO), 1990, 1997, 2001.

In sum, the employment situation in the rural non-farm sector has deteriorated in the 90s. Manufacturing, the most important non-farm sector is marked by a decelerating rate of growth of employment during the 90s. Though mining, utilities, and community services account for only a small proportion of rural employment; employment growth in these sectors was negative. Construction, trade, transport, and business services emerged as the most important sources of rural employment growth in the 90s. These industries have however, a small base, which accounts for around 11 per cent of rural employment in the country. Nevertheless, employment figures in these activities have been associated with various development-related indicators; these are not autonomous. The NSS survey of enterprises presents a trend similar to the NSS quinquennial survey on employment. The situation on the quality aspect of rural employment is also not encouraging; there is persistently high underemployment, casualization has risen manifold. In spite of all these discouraging trends, the real wages of rural workers have increased while the gap between rural and urban wages in non-farm activities has decreased during the 90s.

III. RURAL DIVERSIFICATION: DETERMINANTS AND IMPLICATIONS

Rural diversification may be defined as the economic development of non-agricultural activities. At the micro-level this refers to a livelihood which has multiple, part-time components. In the previous section, the nature and pattern of rural employment across states shows that rural diversification may be associated with a booming or recession economy or with accumulating or immiserating livelihood strategies. These trends, with typologies and implications for rural welfare would be clear from an analysis of disaggregate level data.

The available studies explain positive or negative outcomes of rural diversification with pull and push factors. In the pull or development-led proposition for rural diversification there are again different strands of arguments. Mellor (1978) for instance, argues that technology-led growth in agriculture gives rise to several linkages, which lead to an expansion of employment in the non-agriculture sector. Visaria *et al*. (1994) argue that development of urban centres give impetus to non-farm employment in the adjoining rural areas because of low factor (land, labour) prices in the rural areas. These areas however,

need to be integrated with the nearest rural town. In the development-led proposition for rural diversification, some researchers argue that infrastructure facilities and supportive institutions encourage rural non-farm employment (see Acharya and Mitra 2000). In general, the urbanization and extension of infrastructure facilities in a region are highly correlated. Several human resources related parameters like education and skill development of rural workers, credit availability for non-farm activities have also encouraged the process of rural diversification (Islam 1997).

The second set of arguments explains the phenomenon of employment diversification in rural India with distress-related indictors. Vaidyanathan (1986) found a positive association between the unemployment rate and the incidence level of rural non-agricultural employment in states. He argues that in a situation where the labour absorptive capacity of agriculture becomes limited and the urban industrial sector is not able to accommodate the ever-growing labour force, the RNFS tend to act as a 'sponge' for the surplus labour. The RNFS thus acts like a residual sector in which rural workers concentrate on account of their distress conditions. This is popularly known as the push phenomenon or distress hypothesis which was subsequently, supported by several scholars.

The above discussion suggests that pull as well as push-related factors promote rural non-farm employment (RNFE) growth. However, the pattern of RNFE growth in either of the situations would be different. The present study argues that the non-farm sector consists of several heterogeneous industries, and is influenced by a host of separate factors often independent of other industrial categories. The state-wise employment trends in non-agriculture industrial categories and several related indicators at the level of state also support this premise (Jha 2005). Demographic pressure accompanied by increase in per capita income, for instance, influences construction activities; whereas, rural literacy and infrastructure facilities by and large promote finance-insurance-real estate and business services (FIREB). Employment in trade and transport is highly correlated and is most affected by basic infrastructure facilities like roads. From certain states there are also evidences of road facilities encouraging employment of the rural work force in urban industries like manufacturing, business services. Infrastructure other than roads is also important for employment growth in other non-farm sectors. Manufacturing for example,

requires assured power, business services require more reliable communication facilities, etc. (for details, see Jha 2005).

The above findings are obtained from state-level figures. The state-level data, especially for the bigger states, are too aggregate; in many states small poorer regions co-exist with the prosperous region. Considering the kind of disparity present within a state, the process of RNFE has been studied with a mixture of state and district-level information. In each state, two districts representing low and high concentrations of RNFE have been chosen (see Box II). Selected states and districts with RNFE per cent and its' possible correlates are presented in Annexure Table 1.

A perusal of these districts (see Box II) and of the socio-economic parameters associated with these districts (see Anx. Table 1) shows that districts with a very high concentration of non-farm employment are good in at least one of the income-generating industries like agriculture as in Ludhiana or urbanization-led manufacturing activities as in Gurgaon, Baroda or tourism-related activities as in Kanniyakumari. These trends suggest that income-infusing sectors like agriculture, manufacturing, tourism, etc. provide income in the hands of rural workers / persons, and promote the growth of non-farm activities like construction, trade and services. These non-farm activities are income-absorbing in nature.

Box II: Selected States and Districts for Rural Non-Farm Employment (RNFE) Survey with their abbreviated names in parentheses

States	State codes as in the Tables	High RNFE Districts	Low RNFE Districts
Andhra Pradesh (ANP)	12	Nizamabad (NB)	East Godavari (EG)
Assam (ASM)	21	Kamrup (KP)	Jorhat (JT)
Bihar (BIH)	15	Bhagalpur (BP)	Kishanganj (KG)
Gujarat (GUJ)	13	Baroda (BD)	Mehsana (MS)
Haryana (HYN)	16	Gurgaon (GR)	Jind (JN)
Himachal Pradesh (HIP)	14	Shimla (SM)	Kullu (KL)
Karnataka (KTA)	10	Dakshin Kannada (DK)	Raichur (RC)
Madhya Pradesh (MDP)	18	Damoh (DM)	Jhabua (JB)
Maharashtra (MHT)	11	Satara (SR)	Wasim (WM)
Punjab (PNB)	17	Ludhiana (LN)	Bhatinda (BT)
Tamilnadu (TNU)	19	Kanniyakumari(KK)	Perambalur (PB)
Uttar Pradesh (UTP)	20	Muzaffarnagar(MN)	Kannauj (KJ)
West Bengal (WBL)	22	Jalpaiguri (JG)	Bankura (BN)

Note: Two districts representing high and low concentrations of rural non-farm employment in a state are selected. Subsequently, two village clusters, one near a rural town (within 3 km) and another away from the rural town (more than 10 km) are selected.

In order to investigate the possible determinants of rural non-farm employment (RNFE); the RNFE per cent in selected states and districts are plotted separately with agriculture income per hectare (PHAI), agricultural output per capita (PCAO), infrastructure indices (INFI) in per cent and population density (PDS) per sq. km.[15] In the above instances, the observations, which depict RNFE as more than 40 per cent appear to be outliers for the above sets of relationships. Even if we ignore these observations, a distinct relationship between agricultural development and RNFE is not observed. This is so with both the variants of agricultural development, per capita agricultural production and per hectare agricultural income (see Figs 1 & 2). This trend is not in accordance with the theory of agriculture-led rural non-farm growth. Figure 3 clearly shows a positive relationship between RNFE and infrastructure indices suggesting that with an increase in infrastructures employment in the rural non-farm sector has grown. Population density per square km to some extent reflects pressure on existing resources. A positive relationship with RNFE in Fig. 4 suggests a positive relationship and supports the residual sector hypotheses.

The pictorial presentation shows the relationship between RNFE and one of its determinants at a point in time; the dynamics of rural diversification in actual practice is different since these variables often interact amongst themselves and the collective influence on RNFE growth may be different. The above variables are therefore regressed on RNFE per cent with linear and log-linear specifications. It may be pointed that the regression is accomplished in 10 states with information from 20 districts. In order to get unbiased OLS estimates, information for states is obtained after excluding information for selected districts of the state.

Linear OLS estimates:

RNFE = -22.61 + 1.6 PCAO + 0.3 INFI + 2.8 PDS N= 30, R^{-2} = 0.54
t-stat. (2.6) (1.1) (3.5) (3.2) … eq. (1)

[15] Infrastructure index is the ratio of the infrastructure of individual district / state in relation to the country average. Various infrastructure facilities considered for calculating the index were villages electrified, railway route length per 100 sq km of area, surfaced and unsurfaced road per 100 sq km of area, gross irrigated area in per cent, bank branches and post office per lakh of population, telephone lines per 100 persons, primary school per lakh of population, hospital beds and primary health centres per lakh of popln. These indicators were grouped together conveniently as sectors. These sectors with their relative weight in parentheses are as follows: transport facilities (26), energy (24), irrigation facilities (20), banking facilities (12), communication infrastructure (6), educational institutes (6), health facilities (6). (*Source:* CMIE 2000).

RNFE = -20.42 + 0.4 PHAO + 0.3 INFI + 2.3 PDS N= 30, R^{-2} = 0.56
t-stat. (2.4) (1.4) (3.7) (2.7) … eq. (2)

Log-linear OLS estimates:

RNFE(ln) = -5.26 + 0.2 PCAO(ln) + 0.8 INFI(ln) + 0.5 PDS(ln) N= 30, R^{-2} = 0.54
t-stat. (3.7) (1.6) (2.6) (3.5) … eq. (3)

RNFE(ln) = -4.72 + 0.1 PHAO(ln) + 1.1 INFI(ln) + 0.4 PDS(ln) N= 30, R^{-2} = 0.50
t-stat. (2.4) (1.4) (3.3) (2.9) … eq. (4)

In all four sets of specifications though, the adjusted R-square was not very high, signs of the coefficients are along the expected line and also estimated coefficients for variables other than agriculture are robust (significant at the 1 per cent level). It is interesting to note that variables related to agriculture are the weakest determinants of rural non-farm employment.[16] Finally, equations 2 and 3 have been selected for the present discussion.

In a linear form of relationship, the infrastructure index is the most important determinant followed by population density, both of these variables are significant at 1 per cent. The importance of these variables in RNFE growth can be corroborated from certain studies of the late 80s and 90s. These studies emphasize the role of infrastructure development in increasing rural non-farm employment growth. Population density however reflects the role of push or distress-related phenomenon in promoting RNFE. It is difficult to accept that agriculture plays a lesser role in rural diversification.[17] The issue of agriculture and rural non-farm employment has therefore been discussed separately in the following sub section.

[16] In the linear specification, the PHAO is significant at the 18 per cent level whereas in log-linear specification, the PCAO is significant at a 13 per cent level of significance only.

[17] It may be noted that data set for these estimations are different; in time period analysis for years 1983, 1993-94, 1999-00 employment data is on CDS basis and is sourced from the NSSO; while in previous estimations or equations presented above, the employment data is based on census data and involves a cross section of data from states and districts.

Fig 1: Rural Non-fram Employment and Agricultural Production

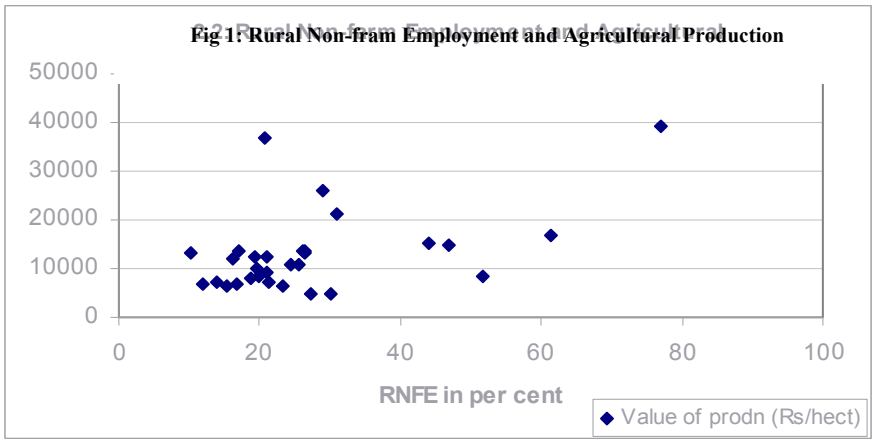


Fig 2: Rural Non-farm Employment and Infrastructure

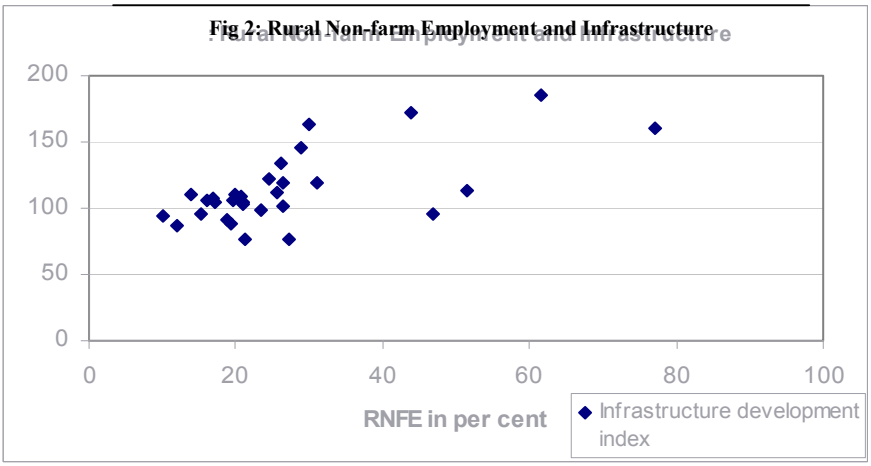


Fig 3: Rural Non-farm Employment and Population Density

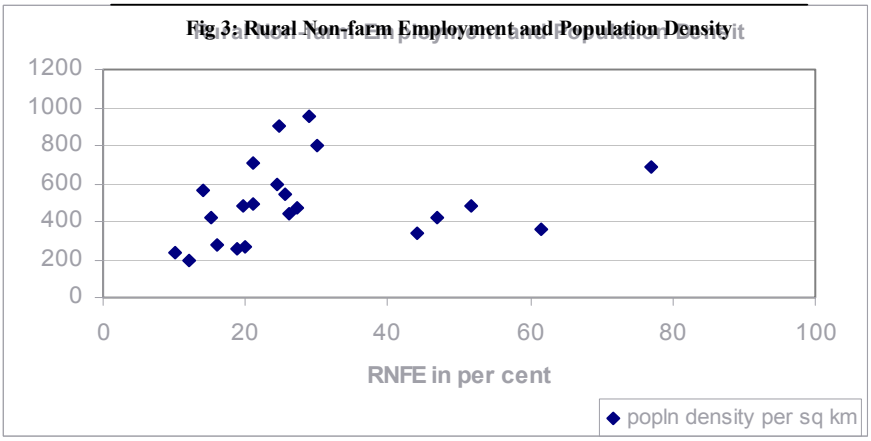
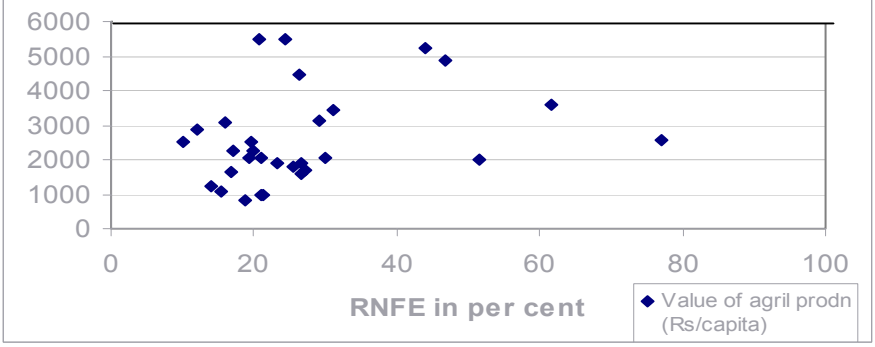


Fig 4: Rural Non-farm Employment (RNFE) and Per Capita Agril. Prodn.



Agriculture, Rural Non-Farm Employment and Poverty

In India, the land-man ratio is decreasing, employment elasticity in agriculture has not only declined but has reached almost zero. In this situation, the rural non-farm sector is generally perceived as the answer for tackling the twin problems of employment and poverty in rural India. From this perspective, the determinant of employment in the rural non-farm sector has been assessed. A review of contesting explanation/hypothesis in the detailed studies about the determinants of rural non-farm employment growth, is presented nicely in Unni (1997). Of all the hypotheses, one which is of particular interest for the present discussion, is the agriculture-led growth of the non-farm sector proposed by Mellor (1978). He argues that rural diversification in India is the outcome of technology-induced growth in the agricultural sector.

Mellor (1978) illustrates the presence of production and consumption linkages of agriculture with the non-farm sector. On the production side, a growing agriculture requires inputs of fertilizer, seeds, herbicides, pumps, sprayers, equipment and repair services either produced or distributed by non-farm enterprises. Increased agricultural output in a forward direction also stimulates milling and processing activities. The consumption linkage in agriculture arises when growing farm income boosts demand for basic consumer goods. This linkage increases over time as rising per capita income (PCI) induces diversification of consumption spending into non-foods. Much of the overall increase in demand for inputs, services, distribution and many basic consumer goods can be serviced by firms in the rural areas and towns, though heavy production inputs and consumer durables are more likely to be produced in bigger manufacturing units in large cities. Researchers have also found a third important link between agriculture and the rural non-farm sector, Hossain (1988) termed it as the labour market interaction effect. Hossain (1988) argues that rising agricultural wages in rural areas in particular raises the opportunity cost of labour in non-farm activities. This induces a shift in the composition of non-farm activity from labour-intensive, low-return activities to more skilled high investment - high return activities. The rising agricultural productivity is thus instrumental in inducing a structural transformation of the rural non-farm economy.

This process of growth in the rural non-farm sector is evident from the state of Punjab where the dependence of labour on agriculture decreased substantially following

technology-led growth in agriculture. Transformation of the non-farm sector in Punjab presents a similar example. Increased demand for agriculture labour has resulted in higher farm wages, which led to a decline in low return household manufacturing and a parallel rise in high return modern small factories and service industries (NHHI). As this generally happened in towns with a rural vicinity, it resulted in the urbanization and growth of the non-farm sector.

The above phenomenon prevalent in Punjab is not evident in many other parts of the country due to reasons that are wide and varied. As a matter of fact technology-led growth in agriculture was witnessed across a restricted part of the country only in the decade of 80s. This growth in agriculture, unlike that in the Punjab, does not appear to have given enough impetus to rural manufacturing activities in other states. To find the reasons for this setback it is necessary to discuss the assumptions in the Mellor hypothesis. Agriculture-led growth as propounded by Mellor and a few others presumes at least two necessary conditions; first, close linkage between the agriculture and the non-agriculture sector as it holds in the relatively closer village economy; second, impending conditions for the non-farm sector to take-off.

The closeness of the village economy is viewed as the flow of agriculture income in terms of rural *vis-a-vis* urban sector produced items. It assumes that the expenditure of a large part of the agricultural income on items manufactured in the rural sector would promote non-farm activities in the rural sector. It appears that with the opening up of the economy, leakages in the rural economy, which were significantly high even in the mid-80s, have increased further.[18] Some of the possible reasons for the same may be; first, with trade liberalization the importance of imported products increased in the rural consumption basket, which discouraged domestic and village-based products; second, with the media spread impact of advertisements, rural consumption of these goods increased. Small and scattered rural manufacturing units cannot afford to spend a significant amount in advertisements and are again losers.[19] Third, an uncertain policy environment for small-scale

[18] Harris *et al* (1984) reported a gradual decrease in the relative importance of goods manufactured in rural centres in the consumption basket of rural consumers.

[19] The small manufacturing units suffer from scale-diseconomy in relation to advertisement and similar sales promotion schemes unless they conglomerate together as in the case of Lizzat papad.

industries discouraged its growth; a significant proportion of such industry is located in the rural sector, so that rural manufacturing is thus discouraged.

Agriculture-led growth of the non-farm sector also presumes 'impending conditions' for growth of sectors other than agriculture. Impending conditions are nothing but the public-good or over-head capital or infrastructure required for promotion of rural manufacturing and similar other non-farm activities. In the 90s, rural infrastructure already in a dilapidated condition has experienced a further disadvantage in that assured power and telecommunication is missing. Nevertheless, Vyas *et al,* (1978) argue that skewed income gains in agriculture limited consumption linkages while inadequate rural infrastructure limited the ability of rural firms to supply the modest increase in input and consumer demands.

The relationship between agriculture (AGRI) and rural non-farm employment (RNFE) is formalized by regressing agricultural performance as measured by agriculture income (Rs. per hectare of cultivable land) on rural non-farm employment (per cent of RNFE in total employment) in states for reference years, namely, 1983, 1993-94, 1999-00 (See Anx Box I). The R-square values and elasticity coefficients suggest that the relationship between agriculture and rural non-farm employment is quite strong; though the strength of this relationship reduced over the years. The decreasing role of agriculture on rural diversification is in accordance with the overall trend in studies related to determinants of rural non-farm sector growth.

The above discussions suggest an alternate pattern of growth in rural employment. Such an alternate growth pattern has different implications for a region and also for the welfare of the workers in the region. Though welfare is too subjective a term, poverty as measured by persons below the poverty line is considered as an indicator of welfare for the present discussion. An attempt has been made herewith to understand the welfare implications of employment growth in the rural sector. Some of the important determinants of the quantity and quality of rural employment in states are observed for association with the incidence of poverty in the rural sector (See Anx Table 2). The important determinants for rural employment considered for the present comparison are agriculture performance as measured by the per hectare agricultural income, labour productivity as measured by the per worker agricultural income, real wages in agriculture, and pressure on land. Employment in

the rural non-farm sector is also important from the perspective of quantity and quality of rural employment in the country. Association between these variables and the incidence of rural poverty in states are computed for the three reference years frequently used in the paper; the same is presented in Box III.

Though the effect of agriculture performances on rural employment has decreased over the years, it remains an important determinant of rural poverty following Ahluwalia (1978). The correlation coefficients as presented in the box have the expected sign, but the coefficients are not significant at even 10 per cent levels of significance. The productivity of labour is undoubtedly an important indicator of rural welfare since Lewis (1954) and others view that the tenet of rural development rests on surplus in agriculture. Surpluses and labour productivity in agriculture are concepts with similar connotations. The association between labour productivity in agriculture and the incidence of rural poverty is significant at five per cent only. The negative sign suggests that states with higher labour productivity in agriculture have a lower incidence of rural poverty. This is quite plausible. Another similar indicator of the quality of rural employment, that is, real wages in agriculture also has similar results. It is however, interesting to note that the association between real wages in agriculture and rural poverty in states has weakened during the 90s. The correlation coefficient significant at 1 per cent in the year 1983 remained significant at 10 per cent only during the 90s. It may be noted that the growth of real wages in agriculture towards the end of the 90s was not duly supported by the real factors in agriculture. The labour-land ratio, which reflects a distress-like situation in agriculture and the rural sector, has not affected rural poverty significantly, though the positive sign of the coefficient is on expected lines. The association between non-farm employment and rural poverty was not significant in the early 80s; this coefficient however emerged significant (at 10 per cent) in the 90s.

A comparison of changes in the above indicators (agriculture performance, labour productivity, real wage, non-farm employment) with the incidence of rural poverty is needed in an assessment of the welfare implications of growth in rural employment; the corresponding figures are presented in Annexure Table 2. The last four columns of the table show a decline in persons below the poverty line during the reference periods at the aggregate and also at the sectoral levels in states. The larger the decline in negative values the better is the rural poverty situation in the state during the reference period. Poverty at the

aggregate level or at the level of the specific sector has declined for all the states during both the decades (1980s and 1990s). Though poverty estimates of 55th round is not strictly comparable with the poverty estimates of 50th round and 55th round; [20] some of the states that show a relatively larger decline in rural poverty during 1990s are Himachal Pradesh (HP), Haryana, Karnataka, Kerala, Maharashtra; whereas, states showing a lower decline in rural poverty are Orissa, Madhya Pradesh, Andhra Pradesh and Assam.

On the basis of information in the Annexure Table 2, the correlation between growth in various indicators of rural prosperity and decline in rural poverty during 1980s and 1990s is presented in the Box III. One would expect a positive relationship between these variables, the signs of coefficients have however varied for most of the indicators barring real wage. It may be noted that the negative sign of the correlation coefficient is more a statistical problem. The negative relationship reflects that a higher value of an indicator for example, agriculture growth, is associated with a lower value of decline in rural poverty during a decade. Since decline in rural poverty during the reference period is a negative term, the lower value in actual fact reflects a higher decline in rural poverty, that is persons below the poverty line. Thus, the negative coefficient shows a positive association between growth in agriculture and the status of rural poverty in the country.

Box III: Correlates of Rural Poverty across States

Correlation Coefficients between Incidence of Rural Poverty / Decline in Rural Poverty and Levels / Growth in respective indicators

Indicators	**1983**	**1993-94**	**1999-00**	**1980s**	**1990s**
Agriculture performance	-0.11	-0.22	-0.35	0.56	-0.57
Labour productivity in agl.	-0.62	-0.55	-0.62	0.06	-0.54
Real wages in agriculture	-0.68	-0.48	-0.49	-0.58	-0.02
Labour-land ratio	0.34	0.47	0.36	-0.48	0.01
Concentration of RNFE	-0.24	-0.54	-0.46	0.30	-0.04

Note: The 2nd , 3rd and 4th columns shows correlation coefficients between incidence of rural poverty and levels of the respective indicators, whereas the 5th and 6th column figure is obtained with decline in rural poverty and growth in respective indicators. At n=15, significant correlation coefficients with levels of significance in parentheses are 0.65 (at 0.01%), 0.52 (at 0.05%) and 0.44 (at 0.10%).

[20] The NSSO in Round 55 (1999-00) made a major deviation in the technique it had been using to establish household consumption levels in terms of the reference periods used. For consumption of food and similar items the reference period used in the 55th round was 'past week' instead of 'past thirty days' though the reference period for certain other non-food items remains 'past 365 days'. Due to difference of reference period Round 55 obtained higher consumption level, especially for lower-income households and lower levels of poverty during the year 1999-00.

The strength of this relationship as is apparent from Box III is not very strong. The correlation coefficient between agriculture performance and rural poverty is more than 0.5 per cent during both the periods. Signs of the above coefficients are however different; a positive association between agriculture performance and decline in rural poverty during the 1990s is as per expectation. The above association during the 80s was however negative (positive sign for correlation coefficient); the underlying implication is difficult to accept since agricultural growth during the 80s is largely acclaimed for its better distribution across space and persons (Bhalla *et al* 1997). The changing signs also show inconsistency in relationships with variation in the data set. It is difficult to establish a relationship between changes in two variables; in that sense such inconsistency is not unfounded.

The association of rural poverty with wage and labour productivity in agriculture is significant in alternate decades, the 80s and 90s, respectively. It is interesting to note that whenever the coefficients are significant, the sign (negative) is also on expected lines. Growth of real wages and labour productivity in agriculture had a positive influence on decline in rural poverty. Most astonishingly, the growth of non-farm employment and decline in rural poverty was not associated; though a weak relationship is evident during the 80s. It is difficult to accept that growth of non-farm employment is not associated with a decline of rural poverty during the 90s. It may be that 'growth' and 'decline' in respective parameters and poverty levels are not associated, though non-farm employment and rural poverty is. This may be true with some other estimates of the box as well. Nevertheless, a decline of rural poverty during the 90s has in fact initiated a whole range of issues in the debate on rural poverty estimates.

In a nutshell, the regression analysis to find the determinants of rural non-farm employment show that the infrastructure index is the most important determinant followed by population density; both of these variables are significant at the 1 per cent. It is however, difficult to accept that agriculture plays a lesser role as compared to the above parameters of rural diversification.[21] The issues of agriculture and rural non-farm employment growth when discussed separately during the reference years show a decreasing role of agriculture

[21] It may be noted that data set for these estimations are different; in the time period analysis for years 1983, 1993-94, 1999-00 employment data is on CDS basis and is sourced from NSSO; while in previous estimations or equations presented above, the employment data is based on the census data and involves a cross section of data from states and districts.

in rural non-farm employment growth. The changing role of these determinants on rural diversification has different implications for rural welfare. The present study considers the incidence of rural poverty as an estimate for the level of rural welfare in the states. The welfare implications of the nature of growth of rural employment has been assessed by computing the correlation coefficient between the incidence of rural poverty and some indicators of the quality and quantity of rural employment in the country. Association between the indicators (agriculture performance, labour productivity, real wage, non-farm employment) of rural employment and the incidence of rural poverty during the reference years is along expected lines; though association between changes in these variables during the reference periods is not very consistent and the same may be ignored. Labour productivity and wages in agriculture have a significant impact on rural poverty emphasizing the importance of agriculture-induced rural diversification in declining the rural poverty of the country.

IV. RURAL DIVERSIFICATION: SOME MICRO-EVIDENCES

The previous section shows that infrastructure and population density are the most important determinants of rural diversification. The kind of impetus these factors provide to rural diversification is not alike. The consequent impact of development- or distress- related rural diversification on the welfare of workers would also be different. These processes of rural diversification in the rural sector have been studied by means of household-level information as collected by researchers in the Agro-economic Research Centres (AERC) and coordinated by the present investigator. Selection of households involves multi-stage stratified random sampling. In the states, districts with either high and low concentrations of rural non-farm employment are selected since the kind of rural diversification is supposed to be different in the extreme districts of a state. As urbanization encourages non-farm employment growth in the surrounding rural areas, in each district two village clusters based on proximity to a rural town, are selected.[22] In other words, the present study expects different kinds of rural diversification in villages near and away from a town. Finally, in a

[22] The proximity of village clusters to rural town is determined with its distance from rural town by road; village cluster within 3 km of rural town and more than 10 km away from rural town were chosen in each district.

state there are four village clusters in two districts; and from each cluster 30 households are selected to study the process of rural diversification.

The level of wages / salaries for rural non-farm activities in different village clusters may suggest development or distress-led phenomenon in rural diversification. Other possible indicators for this purpose may include the average number of economic activities for a worker. The available literature suggests that with an increase of penuries the number of activities undertaken by an average worker increases. The presumption is that only after performing many less remunerative casual jobs, does the family income of wage-earners become sufficient to meet the household expenses.

The NSS data suggest that a significant proportion of rural workers are willing to undertake more than one activity and one of the most important reasons for the same as per the survey is to supplement their existing levels of income (for details, see Annexure Table 3). The number of economic activities recorded for an average worker suggests the influence of distress - related factors. A relatively higher number of economic activities in low-RNFE concentrated districts by and large support the above hypothesis. In some of the progressive states like Gujarat and Maharashtra also, the average number of economic activities is high in village clusters that are near as well as away from the rural town. In the above example, the large numbers of economic activities are associated with the economic prosperity of the region. The average counts of economic activity thus reflect opportunities as well, though this is widely perceived to represent distress-related situations. In the extreme situation, there are also instances of village clusters too poor to provide any profitable employment opportunity for rural workers (for details, see Jha 2005).

The average counts of economic activity by itself does not explain distress- related phenomenon, since in an extremely poor region sufficient remunerative economic opportunities may not present themselves for workers to supplement their income with. In this context, the average wage / salary for workers and the average employment of casual workers in man-days can be some possible indicators that reflect the process of rural diversification.

The average salary for salaried workers in different industrial categories is presented in Table 8, while the salary is presented separately for villages near and away from a rural town in the extreme districts of the state. It is apparent from the table that salary is generally

low for a worker in agriculture and its allied activity. In this context the evidence from Maharashtra and Tamilnadu is different. In Maharashtra, the performance of horticulture-based crops has been good in the 90s as value additions for these crops in the recent decade have been quite high and so also is the marginal productivity of labour and the salary of the agriculture worker in this state. A higher wage for agriculture workers in Tamilnadu during the early years of this decade (2002-03) is largely because of the scarcity of agriculture workers in the rural settings. The salary in certain employment categories is abnormally high in some states / districts / villages. These abnormal figures may be ignored or interpreted with caution, as the small size of the sample may be the reason responsible for this.

A comparison of salary across the non-agriculture industrial groups suggests that the salary is high for workers in manufacturing as compared to the services sector (transport, storage and communications). Salary is even lower for the construction workers. Salaried workers in construction are generally less-skilled labour, who help the skilled mason; whereas, the mason is generally self-employed in his own establishment. In non-agriculture industrial categories, salaries are particularly high in Haryana and Punjab. In manufacturing, a certain trend in salary for workers in villages near and away from the town is evident. The salary is generally high for workers near the town as compared to the workers away from the town. This is in accordance with the previous finding that as one moves away from rural town, the distress-related process of rural diversification increases in many regions of the country.

The average daily wages for casual workers in different industrial categories as obtained in the AERC survey is presented for selected states in Table 9. It is interesting to note that unlike salary, wages for the casual worker in agriculture is as high as in any industrial category. The spatial trend in wages for casual workers in non-agriculture industrial category by and large support the regional trend in salaries. The average wage in the state of Haryana is higher than for many other states. There are reasons for higher wages in this state. In manufacturing, the wages for workers vary across the states; some of the disparity in wages is also on account of the wide and varied nature of manufacturing activities (processing, services, repair, etc.,) and also the possibility of their differential proportion in the AERC samples of different states. In retail trade and services also, wages vary widely across states. Construction is the one employment category where the average

wage is high in all the states. It may be noted that construction, unlike many industrial categories, is demand driven and the higher wages in this category are expected.

Even in a single state, the wage rate varies across selected districts and village clusters. By and large, wages in village clusters away from a rural town are lower than in the village clusters that are near towns. A marginal difference in wages between these villages may be attributed to differences in the cost of living; yet, a relatively higher difference in wages between these villages is perplexing. This disparity in wage suggests distress-led rural diversification in villages away from rural towns. It is interesting to note that in agriculturally prosperous districts like Mehsana, East Godavari, the disparity in wages across village clusters is minimal. The trend from the above districts suggests that agriculture-induced development of a region has better spatial spread across the region. This at least is apparent from the wages of the agriculture workers.

For casual workers, the average employment in a year is as important as the wage since a combination of both determines the average income of the casual worker, which is so closely associated with the well-being of such a worker. The average employment of casual workers in man-years for the agriculture year 2002-03 is presented in Table 10. A perusal of the table indicates that an average employment of more than 60 per cent days in a year is observed in Tamil Nadu, West Bengal, Himachal Pradesh. The average employment for casual workers is particularly low in Gujarat and Madhya Pradesh. This indicates distress-related employment diversification in the rural sector of the latter group of states.[23] In this context, the average employment in certain states like Bihar, which is showing symptoms of distress-related phenomenon, is not very low; there is a possibility of workers involved in some less remunerative work in this state.

Across industrial categories, the average employment is low for activities other than construction work. The average employment in the manufacturing sector was interestingly low, though manufacturing is generally perceived as a skill-intensive activity and the worker / entrepreneur are supposed to be engrossed with their enterprises, which are generally own account enterprises. The average employment trend in these industries suggests that

[23] A very low average employment in Madhya Pradesh is expected; but not in Gujarat since this is a relatively prosperous state. It may however be noted that prosperity in Gujarat is more on account of the robust manufacturing industry largely located in the urban sector.

disguised unemployment is not evident in the case of agriculture alone but that this is now spreading to other non-agriculture industries as well.

The employment status of workers, that is, employee employed as self-employed / salaried / casual worker, in an enterprise is one of the most important determinants of employment quality, since this determines the social security provisions of the workers. It may be noted that the NSS employment data at the aggregate level does not reflect the industry-wise employment status of workers. In this context the AERC information is important as this presents the employment status of workers in different industries in a sample village (see Annexure Tables 5A and 5B).

The employment status of workers may also be influenced by development- or distress-related phenomenon. Development-induced rural diversification is supposed to encourage bigger enterprises and the proportion of salary workers should be higher in this situation; whereas, in distress-led employment diversification the concentration of self-employed and casual workers would be higher. The employment status of workers across industries in selected states of the country based on the AERC sample-design suggests that agriculture and construction are dominated by self-employed and casual workers, whereas, in trade and hotels the proportion of self-employed and salaried workers is high. In transport, storage and communication, the proportion of salary earners is high (see Annexure Tables 5A & 5B).

Employment status in manufacturing displays a definite trend across states. In states where the status of manufacturing or non-household industry (NHHI) is good as in Maharashtra, the proportion of salaried workers is high, while in states with a not-so-good state of manufacturing or NHHI as in Bihar, the per cent of self-employed worker is high. This evidence accords with our hypothesis that development-induced rural diversification leads to bigger enterprises and higher proportions of salaried workers. It may be noted that salaried workers have better social security measures. The results from AERC survey unfortunately do not show any pattern to suggest the effect of village locations on the status of employment (for details, see Jha 2005).

Table 8: Average Salary (Rs per month) during the year 2002-03 for Workers in Specific Industrial Category in Sample Villages in Selected States of India																				
	Karnataka				Maharashtra				Andhra Pradesh				Gujarat				Bihar			
Industrial category	**c1011**	**c1015**	**c1023**	**c1027**	**c1111**	**c1115**	**c1123**	**c1127**	**c1211**	**c1215**	**c1223**	**c1227**	**c1311**	**c1315**	**c1323**	**c1327**	**c1511**	**c1515**	**c1523**	**c1527**
Agriculture		3000	2000	1150	8208	5000			1333	300	1000			1350		1200	570	465	625	375
Manufacturing, etc.,	3000	4000		1200	3250	1950			1500	944	1000	2142	2070	1715	3614	1396	1360	925	875	0
Construction			800		1200	3000	1800				1200						1025		740	920
Trade & hotels	6000	5450			1500	1500	1000			1750	1000						1208	1208	1430	1160
Transp+storag+comn.	2500	3300	1200	2200	3250	3000	2833	2166	1156	1104	1275	2325	2200				1940	1750	1350	1120

	Haryana				Madhya Pradesh				Tamilnadu				West Bengal			
Industrial category	**c1611**	**c1615**	**c1623**	**c1627**	**c1811**	**c1815**	**c1823**	**c1827**	**c1911**	**c1915**	**c1923**	**c1927**	**c2211**	**c2215**	**c2223**	**c2227**
Agriculture	1897	2617							6000	7000	4500	4000	1200		1250	
Manufacturing, etc.	5601	3964	5771	8751		2100	2100		5000	8000	6000	4500		2000	1500	1800
Construction	3375	4251		2790							4000	3000		1500		
Trade & hotels		7151	4834	5001	1000	1350		500	5500	5500	6500	6750		1000		1500
Transp+stor+comn.	5030	2850	1600	2600	1750	1500		1500	7000	5500	4500	7000	1950	2500	2125	1900

Note: In the 4 digit code, first two digits indicate state as presented in the Box II, third digit (1) and (2) present high and low RNFE districts, respectively; while the fourth digit depicts village clusters near and away from town (1) and (5), respectively in high RNFE districts, while (3) and (7) in low RNFE districts. (Source: AERC Survey)

Table 9. Average Wages (Rs per day) during the year 2002-03 for Casual Workers in Specific Industrial Category in Sample Villages in Selected States of India																
	Karnataka				Andhra Pradesh				Gujarat				Bihar			
Industrial category	**c1011**	**c1015**	**c1023**	**c1027**	**c1211**	**c1215**	**c1223**	**c1227**	**c1311**	**c1315**	**c1323**	**c1327**	**c1511**	**c1515**	**c1523**	**c1527**
Agriculture	83.0	57.0	61.0	55.0	62.0	50.0	56.0	60.0	63.0	67.0	36.0	90.0	46.0	39.0	41.0	36.0
Manufacturing, etc.	50.0	25.0	73.0	50.0	35.0		70.0	61.0	30.0	65.0	40.0	38.0	74.0	63.0	57.0	48.0
Construction	89.0	58.0	98.0	50.0	73.0	70.0	65.0	55.0	69.0	100.0	100.0	50.0	115.0	90.0	104.0	87.0
Trade inc. hotels	70.0	32.0	38.0	30.0								61.0	58.0	43.0	49.0	44.0
Ttrans+stor+comn.	50.0	59.0	0.0	25.0	42.0	40.0	60.0	50.0	70.0	60.0			42.0	36.0	37.0	34.0

	Haryana				Madhya Pradesh				Uttar Pradesh			
Industrial category	**c1611**	**c1615**	**c1623**	**c1627**	**c1811**	**c1815**	**c1823**	**c1827**	**c2011**	**c2015**	**c2023**	**c2027**
Agriculture	118.0	113.0	84.0	75.0	42.0	36.0	37.0	35.0	50.0	50.0	27.0	27.0
Manufacturing, etc.	122.0	123.0	90.0	60.0	27.0	32.0				67.0	25.0	
Construction	76.0	80.0	104.0	145.0	70.0	67.0	66.0	93.0	62.0	98.0	31.0	22.0
Trading inc. hotels			128.0	72.0	30.0		30.0			98.0		
Trans+stor+comn.	83.0	82.0	0.0	0.0	105.0	80.0	87.0	70.0		53.0	23.0	22.0

	Tamilnadu				West Bengal			
Industrial category	**c1911**	**c1915**	**c1923**	**c1927**	**c2211**	**c2215**	**c2223**	**c2227**
Agriculture	56.0	58.0	50.0	60.6	45.0	40.0	45.0	40.0
Manufacturing, pro, ser & rep	61.5	50.8	85.2	102.9		75.0		80.0
Construction	81.6	84.5	141.0	89.6	55.0	60.0	60.0	
Trade inc. hotels	62.2		50.5		45.0	50.0	50.0	
Trans+stor+comn.	47.1		50.7	52.4	60.0	55.0	55.0	65.0

Note: In the 4 digit code, first two indicate state as in the Box II, the third digits (1) and (2) present high and low RNFE districts, respectively, while fourth digit depicts village clusters near and away from town (1) and (5), respectively in high RNFE districts, while (3) and (7) in low RNFE districts.

Table 10: Average Employment in Man-years for Casual Workers in Specific Industrial Category in Selected AERC Surveyed States of India in the year 2002-03

	Karnataka				Andhra Pradesh				Gujarat				Assam				Haryana			
Industrial category	**c1011**	**c1015**	**c1023**	**c1027**	**c1211**	**c1215**	**c1223**	**c1227**	**c1311**	**c1315**	**c1323**	**c1327**	**c2111**	**c2115**	**c2123**	**c2127**	**c1611**	**c1615**	**c1623**	**c1627**
Agri. & allied activity	0.54	0.53	0.44	0.22	0.47	0.68	0.54	0.47	0.19	0.09	0.16	0.27	0.49	0.46	0.52	0.55	0.60	0.61	0.55	0.51
Manufacturing, etc.	0.71	0.36	0.41	0.31	0.55		0.82	0.32	0.24	0.16	0.14	0.31	0.41	0.44	0.45	0.47	0.58	0.52	0.63	0.54
Construction	0.62	0.51	0.45	0.46	0.66	0.62	0.63	0.74					0.38	0.39	0.40	0.39	0.90	0.50	0.49	0.48
Trade and hotels	0.51	0.55	0.47	0.29				0.48					0.77	0.82	0.74				0.40	0.46
Trans+stor+comn.	0.39	0.58	0.00	0.27	0.82	0.63	0.27	0.55				0.59	0.74	0.71	0.70	0.67	0.50	0.69		
Aggregate average	0.55	0.50	0.35	0.31	0.62	0.64	0.57	0.52	0.22	0.12	0.15	0.39	0.55	0.55	0.55	0.51	0.64	0.58	0.52	0.50

	Madhya Pradesh				Uttar Pradesh				Tamilnadu				West Bengal			
Industrial category	**c1811**	**c1815**	**c1823**	**c1827**	**c2011**	**c2015**	**c2023**	**c2027**	**c1911**	**c1915**	**c1923**	**c1927**	**c2211**	**c2215**	**c2223**	**c2227**
Agri. & allied activity	0.37	0.30	0.31	0.27	0.56	0.44	0.32	0.57	0.88	0.82	0.79	0.71	0.62	0.53	0.55	0.54
Manufacturing, etc.	0.32	0.29				0.60	0.22		0.86	0.81	0.48	0.45	0.69			
Construction	0.50	0.31	0.45	0.41	0.41	0.52	0.39	0.44	0.74	0.70	0.43	0.70	0.80		0.56	0.55
Trade and hotels	0.55		0.55			0.55			0.79		0.78					
Ttrans+stor+comn.	0.58	0.33	0.57	0.49		0.47	0.68	0.45	0.84		0.78	0.75		0.82	0.78	
Aggregate average	0.44	0.31	0.47	0.38	0.48	0.51	0.40	0.49	0.82	0.78	0.65	0.65	0.71	0.64	0.65	0.54

Note: In the 4 digit code, first two digit indicate state, third digit (1) and (2) present high and low RNFE districts, respectively while the fourth digit depicts village clusters near and away from town (1) and (5), respectively in high RNFE districts while (3) and (7) in low RNFE districts.

In brief, the above discussions show that employment diversification in the rural sector even though slow is the result of diverse factors, grouped together as pull- and -push related factors; these result in development or distress induced diversification. The development- or distress- related rural diversification is location specific. Though there can be various reasons for this process, the study shows that demographic pressure with limited resources generates a push force, whereas a high infrastructure base creates pull forces for employment diversification. The alternate situation can be distinguished however on the basis of average wage / salary to workers, average days of employment in a year, number of economic activities undertaken by an average worker. The average wage and salary directly reflects the economic condition of the worker and is the most comprehensive indicator of development- and distress- related diversification in the rural sector.

The other two indicators considered in the present study, namely, the average number of days employed and number of economic activities undertaken, may be inferred cautiously. The number of economic activities a worker has undertaken is said to indicate a distress- related situation in rural diversification; at times this also reflects opportunity for workers in a region. The AERC survey in combination with the NSS secondary information breaks the general perception that agriculture is the only residual sector. Now there are evidences of trade especially, retail trade and services emerging as a residual sector in certain parts of the country. Increased fragmentation of land has made agriculture less viable, whereas, increase in rural literacy encourages people to undertake trade and service activities even though it is not a very profitable proposition.

V. POLICY OPTIONS

As discussed earlier, rural non-farm employment includes several heterogeneous non-farm activities that have different demand and supply conditions in their input and output markets; the policies therefore have to be industry- (within the broad RNFS) specific. In the present discussion, government policies related to rural employment are essentially industrial policies with a significant bearing on the intensity and productivity of labour in the rural sector.[24] Since employment and output in an industry are highly correlated, it is

[24] Industries here refer to the CSO classification of industries, which consists of three sectors primary, secondary, tertiary and nine industries.

difficult to separate industrial development policies from those policies that are targeted towards employment generation in an industry. This separation has become even more difficult with the increased importance of cost efficiency in a liberalizing world. The findings of the present study suggest that growth in either agriculture or the manufacturing sector is important for the robust growth of employment in the rural sector; though the debate on the sectoral precedence of agriculture *vis-à-vis* manufacturing in the short run goes on.[25] This paper therefore argues that depending on the resource endowment of the region either of the above industry may be promoted. Subsequently, growth in other industries may follow depending on the micro-level environment for growth in these industries. Sub-section (A) discusses this issues.

The infrastructure-related issues in non-farm employment growth are discussed separately in sub-section (B) of the present section. Experience shows that growth in industry is often not sufficient for employment growth especially in terms of quality of employment. Industry often encompasses enterprises of different sizes having different levels of profitability and working conditions for workers / labour. Government therefore mediates in the rural labour market. These mediations in the form of assuring minimum wages or in the form of provisioning of satisfactory social security are also discussed in this sub-section (B). Inspite of the creation of such infrastructure and environment a significant proportion of the population is left out of the developmental process. As a result, direct employment-generation programmes (EGP) have become part of our development planning since the last few decades. The importance of such programmes has further increased with the high incidence of unemployment. These issues are discussed separately in sub-section (C) below.

(A) Sectoral Growth

Though as per CSO classification there are nine industries and the growth in all these industries are important. The present investigator believes that growth in agriculture and

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[25] Since Lewis (1954), industrialization was perceived as the prime mover of 'trickle down' this perception at least for developing countries weakened in 1970s and Ahluwalia (1978) argues that even within the prevalent inegalitarian institutional and property ownership structures growth of agricultural, GDP would trickle down and remove unemployment and rural poverty in country like India (Saith 1991).

manufacturing is important for a remunerative, broad-based growth of employment in the rural sector. Growth in these industries would trigger employment growth in other industries. The present sub-section discusses the manufacturing sector in detail; whereas, suggestions encompassing other sectors / sub-sectors of the rural economy are grouped together and presented below.

Agriculture

Government policies related to agriculture during the planned development of the country have passed through at least three distinct phases. The first shift in policy was evident in the mid-60s with the increased importance given to self-sufficiency; the second line of demarcation marked the opening up of trade in the early 90s. It is really difficult to separate out employment-related policy in agriculture from the sectoral policy. Any government policy, which increases cropped area and crop productivity would increase employment and wages, respectively in agriculture. Some suggestions for increasing cropped area and productivity in agriculture involve technological innovations, infrastructure development, rationalization of farm input prices, besides other issues. These issues are have been discussed elsewhere in detail (see Jha 2006).

There is also scope for increasing vertical integration of farm-firm. The less-exploited options in the form of apiculture, sericulture, rearing of birds and small ruminants need to be encouraged especially on small farms. This will increase the utilization of family labour especially that of women and can make the small farm more viable.

Rural Manufacturing

The rural sector has a definite advantage over its urban counterpart in manufacturing certain groups of commodities. The first set of products, those which utilize local resources and are semi-processed. These are not very scale intensive, while examples in this category include honey and organic foods. The second set of products also based on local resources, is highly processed, and are not scale neutral. In this category, technologies that are capital intensive in nature often play a significant role. Agro-processing and ancillary units near urban centres are examples in this category. The third set of products consists of unmanufactured or semi-manufactured items. These are also labour-intensive and examples in this category are traditional crafts by rural artisans. The Government of India has created specific institutions

for the promotion of these industries, among which specific mention may be made of the Khadi and Village Industries Commission (KVIC).[26] Certain government schemes specifically targeted towards encouraging rural manufacturing include the reservation for small-scale industry (SSI) and cluster programme.

The KVIC at the national level, Khadi and Handloom Boards at the state level and innumerable institutions and cooperative societies at the disaggregate level were created for the development of khadi and village industries. [27] The khadi and village industries are launched to promote local-resource based products and traditional crafts in the rural areas.[28] Apart from promoting rural entrepreneurship, KVI products which attract fiscal concessions are often not cost-efficient for which the reasons generally cited are inefficiencies of the KVI-system.[29] There have been significant efforts in the recent years to reduce inefficiencies in the KVIC. For instance, a market -development assistance scheme against the prevailing rebate schemes for the KVI products was launched. The KVIC has also introduced a franchise scheme for its products. For KVI products, quality has been a problem. To improve the quality of KVI products, the KVIC in recent years has launched some brands such as 'Sarvodaya' for fast moving capital goods like toilet soaps, pickles, honey; 'Khadi' for the upmarket and essential products such as essential oils and herbal products; and 'Desi Aahar' for organic foods, cereals, and spices. The KVIC in order to promote marketing has further united various product-based producers in a marketing federation (Confederation for promotion of khadi and village industries, CPKVI) to take up the branding and marketing of KVI products.

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[26] The KVIC is entrusted with planning, promoting, organizing and implementing programmes related to khadi and village industries in the country.

[27] Khadi means any cloth woven on handloom in India from cotton, silk or woolen yarn handspun in India or from a mixture of any two or all of such yarns. Village industries means any industry located in a rural area which produces any goods or renders any service with or without use of power, in which fixed capital investment (in plant, machinery, land and building) per head of an artisan or a worker does not exceed rupees fifty thousand.

[28] The rural area here is any area classified as village as per the revenue records of the state, irrespective of population. This also includes those areas, which are classified as town but the population of such area does not exceed 20,000.

[29] The KVIC has identified and accredited training centres all over the country to conduct entrepreneurial development programme (EDP) for entrepreneurs. The KVIC in its rural employment generating programme also provides margin money for financing viable village industries projects with an investment limit up to Re. 2.5 million and Re. 1 million in the case of institutions and individuals, respectively.

Government carved out the SSI in its industrial policy resolution which also creates several institutions to promote the small-scale sector (Jha 2005a). A significant proportion of small industries are in the rural sector therefore, robust growth in the SSIs is important for growth of rural manufacturing. Government has taken certain steps in the recent years to promote growth in these industries. Thus, investment ceilings for the small-scale industries have been hiked to Rs. 10 million, for selected items this hike has been to the extent of Rs 50 million. Government has also attempted to revive the sector by infusing credit through SSI specialized bank branches, a small and medium enterprise fund under SIDBI, *laghu udyami* credit card scheme, etc. Certain problems specific to the SSIs however remain.[30] In an open economy, the very concept of reserving industries is not tenable; therefore, the uncertainty associated with the reservation of SSIs must end with some categorical stand regarding this. The performance of small and tiny industries also depends on the economic performance of some public sector monopolies that provide basic goods and services. Many of these units have unfortunately less regard for cost efficiency, while the unit cost of production is becoming important in an open economy.

In a globalizing world when technology, cost and quality have become important, rural industrialization cannot rest solely with the KVI, SSIs. Increased private participation is desired to achieve a robust growth in rural manufacturing. Favorable infrastructures, largely under the public domain are also required. International experiences suggest the creation of industry clusters in the rural vicinity as an effective process of rural industrialization. The union government has identified 60 industry clusters in July 2003 for focused development by including their credit requirements in the state credit plan. More recently, the KVIC with the help of SIDBI and NABARD and support of the Ministry of Agriculture and Rural Industries is trying to implement the National Policy for Agriculture and Rural Industries (NPRI). This consists essentially of technological advancement and skill upgradation for effective development of industrial clusters at the district level. This scheme will promote the participation of private entrepreneurs and NGOs. The Ministry of Food Processing Industry has also set up food parks in different parts of the country. This is

[30] Some problems of the small scale industries which still exist are; prevalence of *inspector-raj* beyond the turnover of Rs.10 million, *adhocism* and arbitrariness in de-reservation, high cost in obtaining basic goods and services because of prevalence of public sector monopolies in these industries, arbitrariness in import tariff charges for goods already reserved in the SSI or for similar competing goods in the SSI.

to provide capital-intensive common facilities such as cold storage, warehouses, quality control laboratories, effluent treatment plants, etc. to the adjoining processing units. The public sector units or corporate or even cooperatives are eligible for grants up to Rs. 4 crore for the creation of such facilities. So far, 20 food parks have already been sanctioned (GOI, 2004); implementation in actual fact is however, not known.

In spite of these efforts, the performance of rural manufacturing in the 90s has not been satisfactory. The reasons can be numerous for example; The example policy impediments for specific rural industry, the burgeoning gap between rural and urban infrastructure, or decline in demand for products manufactured in the rural sector. With the opening of the economy and the increasing role of advertisement in the marketing of consumer goods, it is easy to influence the rural expenditure pattern for urban manufactured items. There is always the possibility of creating suitable conditions and institutions for rural manufacture.

The KVIC as discussed earlier plays an important role in the production and marketing of unmanufactured or semi-manufactured products. The performance of the KVIC has however been far-from satisfactory. There are suggestions to convert it into a promotional and development agency rather than a financial agency. The KVIC should provide technical support to the KVI units; this includes product process research and market strategies for the KVI-products. Since the village resource-based products have a niche in the international market, the KVIs need to do some aggressive marketing. There is sufficient scope for also reducing corruption in the KVI-system. Regular vigilance for example, may check malpractices in the khadi rebate disbursal. While adequate checks are needed for irregular release of export incentives, ad-hocism in the provisioning of rebate to the khadi sector may be abolished and a medium-term strategy on rebate must be chalked out so that production and planning are not disjointed.

Since the KVIC has failed miserably in performing its duties there is need to involve the private sector and NGOs in the development of khadi and village industries for an optimal utilization of resources and reap the promise of opportunities in a liberalizing world. In order to increase the cost competitiveness of KVI and similar products often, there are demands for exempting these products from the value-added-tax (VAT). The Department of

Agriculture and Rural Industry may pursue this suggestion with the state government; it may be noted that all state governments are to adopt the VAT system.

Though the rural sector has distinct advantages in agro-processing, many large-scale processing units have not emerged in the rural region in many parts of the country. The organized growth of the processing industry also requires an emphasis on post- harvest infrastructures. There is scope for increasing private participation in the development of post-harvest infrastructures such as silos and warehouses, cold storage facilities and air-conditioned transport. In order to remove some of the bottlenecks, contract farming is being practiced in different parts of the country; a wider success of contract farming among other things also requires the promotion of formal relations between growers and industry.[31] In the rural sector there is need for the establishment of small-scale processing units involving the latest technology. Unfortunately efficient technology for small scale processing has not received due attention.

International experiences suggest the formation of industry cluster as a possible way of rural industrialization. In the recent decades, several ministries and departments have also initiated efforts towards the creation of industry clusters. These efforts need to be coordinated as adequate synergy between these schemes may leave sufficient funds to promote many industrial clusters in a large part of the country. Government may also devise ways to encourage private participation in creating some of the common facilities in industrial clusters.

The rural sector in India has a large number of artisans. In this changing world, the demand for some products of the artisans' work has declined, while that of some other skill-intensive, artisan-like work has increased; such shifts in demands need to be assessed. In a liberalizing world, when distance is shrinking there may be a latent demand for an artisan's work in a distant market, the tapping of which requires the help of market professionals. In the context of emerging opportunities rural artisans abilities may be increased on a selective basis; while care is taken to ensure that this training is integrated with the production and marketing of such products. Though some public institutions such as the KVIC have been mandated for similar purposes, they have failed miserably in performing their role. There is

[31] Some of the important problems are dearth of economies of scale, lack of assured quality of raw material, lack of incentive to either producer or consumer because of multiplicity of middlemen on account of small scale of production.

a need for alternate institutions and producers' associations to undertake the job of training, producing and marketing the rural artisan's products. NGOs may encourage the formation of producers' SHGs to share the benefits of lucrative prices in distant markets; a good example of which is presented by *lijjat papad.* The formation of clusters would also help artisans' in removing many of their size and scale-specific bottlenecks.

Box IV: Lijjat Papad

Shree Mahila Udyog Samiti is a successful cooperative venture with 1800 member female workers in Pune alone. They manufacture *Lijjat papad*, for which individual members are provided with dough; later they market together. They have an informal way of training new incumbents by an existing member.

The subject of rural industrialization is related to many government departments/ ministries; for instance, the Ministry of Industries, Department of Agriculture and Rural Industries, Ministry of Rural Development, Department of Food Processing Industries. Similarly, public institutions created for rural industrialization or entrusted with the job of rural industrialization are also numerous. The lack of proper coordination among these institutions also leads to the tardy progress of rural industrialization in the country.

The above discussion shows that the rural sector has an advantage in certain kinds of manufacturing activities. These manufacturing activities depending on the typology require different kinds of institutional support. In labour-intensive, capital-light, local resource-based manufacturing activities, there is sufficient scope of improvement in the functioning of KVIC, there is also need for encouraging producer-based small SHGs. For capital-intensive rural manufacturing activities common-facility centres, and a facility for industry-agglomeration is required. As, rural manufacturing is central concern of many government department plans, poor coordination between these departments often results in duplication of some programmes while tardy progress occurs in other programmes related to manufacturing activities.

Other Sectors

Though agriculture and rural manufacturing bear the onus of employment growth in the rural sector, several other industries like construction, trade, transport and business services have emerged as important in recent years. Employment growth in these industries depends

on factors, such as infrastructure, per capita income, population density. Again a host of government policies influence these factors.[32]

Employment declined in utilities and community services; these industries fall largely under the public domain and since government is reducing its staff strength, employment under these categories has also declined. Demand for these services has however not declined, and has in fact increased with the pressure of population and shrinkage of common resources. There is enormous potential for private participation in the delivery of utilities and community services and thereby increasing rural employment in the country.

B. Infrastructure and Environment for Employment

Certain government policies, though basic for the growth of industry, are not industry-specific, these transgress across industries / sectors. Examples under this category include credit and infrastructure-related policies. Traditionally, the state is perceived as the provider of infrastructure and public institutions as the creator of rural technology. This perception is however changing with the emergence of new institutional alternatives. The sustenance of such institutions also requires government support, which may be in the form of suitable legislative environment. Another set of government policies increases the capabilities of workers by providing better education and health facilities. Still another set of government policies for the social security of the workers attempt to protect vulnerable workers from contingencies such as, illness, accident, untimely death of bread-winner, old age and unemployment. Some of the above issues are illustrated below.

Technology and Skill Formation

Technology generation and dissemination, which is of special of interest to the rural sector is largely confined to the public domain. There is a general feeling that our public-funded research and extension system is less responsive to the needs of the people. The response of the farmer or target groups may be assessed through their willingness-to-pay for the research and extension services. With the user's payment principle, the research and extension

[32] Some of these government policies, lay an increased emphasis on basic infrastructures like road; fiscal concessions for construction of houses, policies helpful in decreasing the relative price of building materials like cement, iron, etc.

system may emerge as more accountable and self-sustaining in the long run. In this regard, the government has made some progress with the agri-clinics; and there are also suggestions for village knowledge centres. The present investigator believes that information technology (IT) - enabled knowledge dissemination centres can potentially provide a viable solution to individual's problems at a distant isolated place.

The present investigator essentially proposes a public-private partnership, wherein technology generation will largely be in the public domain and its extension would partly be with the private, voluntary organizations. Some voluntary organizations are documenting available technologies and are also disseminating these in the rural area. Such efforts however, need to be consolidated and further replicated in a large part of the country.

The existing training infrastructure that has some relevance for the rural sector, such as the District Industry Centre (DIC), Industrial Training Institutes (ITIs), rural poly-techniques is in a bad shape. These institutions must be revitalized and made relevant to local needs. These rural institutes should also identify newer trades for training taking note of the resource endowment of the region and also the emerging opportunities in a liberalized / globalized context. Such trainings should be coordinated by local institutions, such as, the DIC, District Rural Development Agency (DRDA).

Finance and Infrastructure

In spite of the heavy emphasis on institutional credit for farm and non-farm sector, these remain capital-starved. Financial institutions on the other hand often miss their target for priority sector lending. The supply-demand mis-match in rural credit is often on account of lack of sufficient collateral. The concept of community collateral has emerged as important in recent years. The self-help-groups (SHGs) present a viable mode of arranging community collaterals. The SHGs in addition to serving the needs of individual small-scale finances also resolve some specific problems associated with small-scale production of the non-farm sector. The performance of SHGs due to various reasons has however not been uniform across the country. The skewed distribution of non-banking finance institutions (NBFI), which is instrumental in the disbursement of credit to SHGs in the states, is the most

important among these. In order to encourage the activity and distribution of NBFI across the country, the credit limits of the NBFI may be reduced.[33]

There are suggestions to involve the regional rural banks (RRBs) in disbursing credit through SHGs, since the RRBs are relatively better distributed in the country. As there are already discussions about the ways to increase the viability of RRBs, this additional work will spread their portfolios and may help in making these units more viable. A uniform spread of SHGs in addition to other actors also requires many credible NGOs in a large part of the country.

A part of the need for credit will be solved if the community collateral and borrowing for viable industry- / product-specific infrastructure project is allowed on an extended scale. In order to overcome some other problems related to collateral, industry associations and cluster-level units, may also be encouraged to form a mutual credit guarantee fund. Service sector units such as trading houses / agencies which assist in marketing or brand building of rural products may be given due priority by the banks and financial institutions.

The kind of infrastructure required for a specific industry or a product-group varies. Some industry-specific infrastructure like, cool van, quality-control laboratories for agro-processing, etc., may be initiated by private parties or producers' and traders' associations and such initiatives definitely require a favourable incentive structure. Government may focus on basic infrastructure like road, power and communications, since in the rural areas such basic infrastructure would largely remain in the public domain. In this context, there are suggestions that the Rural Infrastructure Development Fund (RIDF) may be used more liberally in making investments in projects other than irrigation as well. The existing RIDF disbursements across states are highly skewed so that for generally prosperous states the share in total disbursement is higher. A better regional distribution requires relatively easy conditions for disbursement of rural credit under RIDF. More recently, government has launched the Bharat Nirman programme precisely to strengthen the rural infrastructure of the country.

[33] The Small Industries Development Bank of India (SIDBI) also funds the SHGs through NBFIs; the required credit limit for the NBFI (which is supposed to operate on a no-profit basis) is too high (Rs. 2 crore).

Social Security and Labour Welfare

Most of the social security and labour welfare policies in India cater to the organized sector, whereas, it is the unorganized sector which provides the bulk of employment to rural people.[34] There is a general feeling that workers in the organized sector are over-protected, while their counterparts in the unorganized sector lack minimum social security provisions. The nature of rural employment is often cited as a possible reason for such apathy. Employment in the non-farm sector is often seasonal, earnings are also irregular and low, while in many cases, the employer-employee relationship also does not exist. Though the employer-employee relationship exists in establishments, these are often not registered with the state governments.

Minimum wage is an important instrument for the provisioning of labour welfare, though instances of violations of minimum wages are numerous. The legal limitations, definitional constraints and over-burdened courts are often cited as reasons for the violation of minimum wages. In the unorganized sector where workers are regular and an employee-employer relationship exists, the provisions of minimum wages and social security to workers only requires that it may be made obligatory on the employer. This of course requires identification of such establishments; the second National Commission on Labour (NCL) suggests enactment of the Small Entrepreneurs (Employment Relations) Bill to cover all establishments employing up to 19 workers and protection to all aspects of workers including wages, social security, safety and health. The NCL also proposes an umbrella legislation to ensure minimum wages to workers in the unorganized sector. For this purpose a worker is defined as one who is registered with a government agency and would permit the administrative body to decide the matter in case of dispute.

Absence of the employer- employee relationship in certain rural enterprises, requires some innovative schemes suitable for particular micro-settings. Some state government has attempted to create a welfare fund for target groups of producers like, *bidi* workers, by collecting 'cess' from consumers of the finished products. Certain state governments in association with Non-Government-Organizations (NGOs) have introduced social security

[34] About 92 per cent of our total workforce is unorganized; most of the rural workers fall within the unorganized category.

schemes for specific target groups of workers; some of the successful schemes out of these experimentations need to be replicated throughout the country.

Government has recently introduced the Social Security Group Insurance Scheme for the unorganized workers with the help of the Life Insurance Corporation of India.[35] Often, the reach of government social security schemes is limited because of poor literacy, unawareness of rural workers, they are also less organized. Some of the anomalies specific to rural workers can be reduced by the formation of Self-help-Groups (SHGs) of workers employed in similar activities. The SHGs so formed can participate in certain welfare schemes of the government. The SHGs with the help of NGOs can interface with the government agency in a better way.

In India, the expenditure on social security is also low (less than 2 per cent) as compared to many similar countries like Sri Lanka (4.7 per cent) and China (3.6). Nevertheless, a large part of this expenditure is being incurred for the organized sector. More recently, the National Committee for Enterprises in the Unorganized Sector under the chairmanship of Prof. Arjun Sengupta has drafted a scheme to provide benefits of health insurance, life insurance and old age security to the entire unorganized workforce of the country. An alarming situation on account of social security for unorganized workers suggests that the committee report may be adopted.

C. Employment Generation Programmes

There has been a general feeling that the benefits of the growth process did not trickle down to certain disadvantaged sections of the society. Lipton (1983) illustrated some socio-economic attributes about the disadvantaged section, [36] which restricts them from joining the trickle-down queues. This section of the society requires programmes especially targeted towards them and now for a considerable period of time various income and employment

[35] This scheme covers all persons in the age group of 18-60 years belonging to 24 approved occupation groups. The premium under the scheme is Re. 10 per thousand sum assured of which 50 per cent is paid out of the social security fund and the remaining 50 per cent is paid by beneficiary or the nodal agency.

[36] The socio-economic attributes as per Lipton are with respect to demographic, nutritional, labour market, asset ownership and other variables. He contends that with respect to the above variables it is possible to observe a discontinuity in the form of a reversal or a point of inflection in their distribution over households ordered according to their average per capita income. The strata below the kink are then defined as being the 'poorest' / disadvantaged.

generating programmes are in existence in India. The employment generating programmes largely fall under two broad categories; self-employment generating and wage based employment generating programme. The first set of employment generation programme (EGP) attempt to remove chronic unemployment by providing economic assets to the beneficiary while the second group of programmes provides supplementary employment to stave-off seasonal unemployment. Some important suggestions in relation to these progarmme have been presented below.

The self-employment generating programmes have been modified frequently; Swarnajayanti Gram Swarozgar Yojana (SGSY) for instance, was launched in April 1999 after review and restructuring of the erstwhile IRDP and allied schemes. The broad objective and instruments of the programme remain the same as that of the IRDP. A high non-willful default rate of the SGSY beneficiaries in fact, suggests that the assets provided to them in the self-employment generating programme do not remain viable in the long run. In the SGSY, selection of projects for beneficiaries should be such as to consistently increase the productive capacity of individuals in the long run. Assessing the suitability of economic activities / enterprises for individuals in particular micro-settings may require the help of professionals. Financial institutions like the National Bank for Agriculture and Rural Development (NABARD) provides such services at a relatively aggregate level; but their reach in terms of provisioning of consultancy services for the selection of individual projects is limited. In this regard it may be noted that nationalized banks were appointing agriculture specialists for a similar purpose; the practice of appointing an agriculture specialist has unfortunately been discontinued in the recent decades.

The projects related to allied activities are important considering the kind of pressure on the land. It is generally felt that the project fund being released in the SGSY or similar rural development programmes are inadequate for the programme beneficiaries to start their operations on a large scale. Many of the disadvantages of these beneficiaries are in fact associated with the lower-scale of production; this can be improved by creating producers' groups as in the SHGs. Certain innovative arrangements as that of contract farming can also improve the viability of small and scattered production units. The long- run viability of the self-employment generating programme therefore depends on the scale of finance, the kind of projects selected and also the institutional arrangements of the production units.

The wage-based employment generating programmes were also modified frequently, for example, in September 2001, all wage-based employment generating programmes were merged into the Sampoorna Grammen Rozgar Yojana (SGRY). Unlike many other programmes of the present day, the SGRY is implemented through the Panchayati Raj Institutions (PRI). In February 2001, the food-for-work programme was also launched in some backward regions of the country. In SGRY or similar wage-based employment generating programmes (EGP), the rural asset is an important component. These programmes may be recast in a way that the programme apart from providing short-term employment also helps in building the productive capacity of the region. In rural assets, the programme should prioritize community assets whose benefits can be shared by a large number of people. The present investigator believes that the wages in the EGP must not be higher than the minimum wage prevailing in that region; the lower wage may be used as an instrument of self-exclusion for the rural work programme (RWP). Studies suggest that income as a criterion for selection of beneficiary has resulted in various pilferages in the programme.

In spite of the large emphasis on different wage-based employment generating programmes, the scale of employment provided by these programmes has been inadequate.[37] Considering the grim unemployment scenario in rural areas, the United Progressive Alliance (UPA) Government enforced the Rural Employment Guarantee Act that would legally guarantee employment to one person in every poor household for a minimum of 100 days on asset-creating public works. Programmes of such large magnitude have other implications as well, it is generally felt that increase of expenditure in such programmes is often associated with a decrease of public expenditures in the social sectors (Mahendra Dev 2000). Investment in the social sector is however, important for a long-term growth of the rural sector.

Though there have been efforts in recent years to unify many of the wage-based EGP, the present study finds that the possibility of further consolidating employment generation and developmental programmes exists. Examples of some labour intensive rural works programmes undertaken by different government departments are soil conservation,

[37] GOI document on the REG Bill states that the average scale of employment under SGRY during the year 2002-03 and 2003-04 was 20 man-days for each household Below Poverty Line (BPL).

watershed development, construction of schools and *pucca* roads. There is a feeling that if works under these departments are pooled and coordinated at the district level, it would leave sufficient funds for broadening the wage-based employment programmes and for simultaneously creating durable community assets in the rural sector.

With decentralization under PRI, the unification of various labour intensive rural works programme (RWP) may not remain a far-fetched idea. This probably requires the formulation of district level plans and proper coordination between elected body, bureaucracy, and professionals like subject matter specialists at the district level. The district-level plan may take some more time to realize. For the time being, a clearing house at the district level may be setup for sharing of information by various agencies administering the employment generation programme so as to avoid duplication of beneficiaries and the creation of durable assets in the programme.

VI. CONCLUSION

Though rural manufacturing is the most important industrial category in the non-farm sector, employment growth in it decelerated during the 90s. There are also evidences of manufacturing activities shifting away from the rural to urban sector in the country. Construction, trade, transport and business services have spear- headed rural employment growth. Employment growth in these industries is not autonomous; it depends on a host of developmental and demographic factors generally associated with the developmental stage of the region. Moreover, these industries together account for only 11 per cent of rural employment in the country; therefore there is a slim chance that these industries would remain the driver of rural employment growth in the country. It is interesting to note that though the quality of rural employment has deteriorated, casualization of rural workers also increased. The real wages for rural workers increased consistently and disparity in the rural urban wages also reduced towards the end of 90s. The NSS state-level data suggest that both push-and-pull factors have contributed to rural non-farm employment growth in the country. In certain states like Bihar, where push-related factors are strong, there are evidences of male workers crowding out female workers in the rural sector.

In development-related factors of rural diversification, infrastructure has emerged as more important during the 90s. Agriculture, which used to be the most important

determinant of rural diversification has lost its place of eminence during the period. The study with the help of micro-level data from the AERC distinguishes income-infusing and income-absorbing rural activities. The study suggests that growth in income-infusing activities as that of agriculture, manufacturing, tourism encourage development-induced diversification while dearth of such activities leads to distress-induced diversification in the country. It is interesting to note that though the influence of agriculture on rural non-farm growth has decreased, prosperity associated with the agriculture-induced rural diversification is better spread across space in a region. The study with the help of the AERC household-level survey showed that though there are many indicators to distinguish development and distress-induced rural diversification, the average wage and salary is the most comprehensive indicator.

The present study argues that growth in agriculture and manufacturing is important for a broad-based growth of development-induced diversification in the country. Strategies to increase rural non-farm employment growth therefore lay greater stress on these sectors; though other sectors and issues related to non-farm employment in the country are discussed as well. The discussion is more to do with institutional alternatives; and a review of public institutions performances suggest sufficient scope for improvement by making them more accountable. Stakeholder's participation in the management of these institutions and a levy of user's charges for availing of the services of public institutions are some suggestions to make these institutions more accountable. To allay the disadvantages associated with small producers certain innovative institutions like SHGs of producers or cooperatives with corporates as one of the stakeholders have emerged in select parts of the country. Such successful experiments need to be replicated over a wider area. The non-farm sector encompasses a large number of activities, the success of which in a country as diverse as India requires frequent innovations in rural institutions depending on the changed perspective and socio-economic conditions of people.

In direct measures of employment, the rural works programmes are important for at least three reasons namely, increased marginalization of agriculture land, increased seasonality of employment and the importance of public goods in the rural sector. The study however feels that other employment-generation programmes such as the self-employment generation programme are not less important. This programme primarily caters to the

chronic unemployment. Certain anomalies in direct employment generation programmes of such a large magnitude will always be there and such anomalies can be identified with concurrent evaluations of such programmes. With decentralization and effective participation of PRI, certain more frequently cited weakness of employment -generating programmes will be eliminated. The coordination between employment generating and development programmes will also improve.

REFERENCES

Acharya, S. and A. Mitra (2000). "The Potential of Rural Industries and Trade to Provide Decent Work Conditions: A Data Reconnaissance in India", *SAAT Working Papers*, International Labour Organization, New Delhi.

Ahluwalia, M. S. (1978). "Rural Poverty and Agricultural Performances in India" *Journal of Development Studies,* Vol. 14, No. 3, April.

Basant, R., B. L. Kumar and R. Parthasarathy (1998). (edited). *Non-Agricultural Employment in Rural India: The Case of Gujarat,* Rawat Publications, Jaipur, India.

Bhalla, G.S. and G. Singh (1997). "Recent Developments in Indian Agriculture-A State level Analysis" *Economic and Political Weekly*, Vol. 32, No. 13 (March 29).

Bhattacharya, B. B., N.R. Bhanumurthy and S. Sakthivel (2004). "Economic Reforms and Structural Changes in Employment: A Comparative Analysis of Gender- Specific Employment Behaviour in Organised and Informal Sector in India", an unpublished report, Institute of Economic Growth, Delhi.

Central Statistical Organization (CSO). *Annual Series of Income* – various issues, New Delhi.

---------- (2001). *Economic Census 1998- All India Report,* New Delhi.

Centre for Monitoring Indian Economy, CMIE (2002). *Profiles of Districts,* October issue, Centre for Monitoring Indian Economy (CMIE), Mumbai.

Chadha, G.K. (2001). "Impact of Economic Reforms on Rural Employment: No Smooth Sailing Anticipated." *Indian Jl. of Agricultural Economics*, Vol. 56, No.3, pp. 491-97.

Chandrasekhar, CP and Jayati Ghosh (2004). "How Feasible is a Rural Employment Guarantee?" *Social Scientist,* No.4 (July-August): 374-375.

Chinna, Rao B. (2004). "Rural Non-farm Employment in Andhra Pradesh*",* Unpublished report submitted by Agro-Economic Research Centre (AERC), Waltair to the Ministry of Agriculture, GoI, New Delhi.

Dreze, J. (2004). "Financial Implications of an Employment Guarantee Act: Preliminary Estimates", A note prepared on behalf of the National Advisory Council, Government of India, New Delhi.

Dutta, R.A. and S.L. Bhaiya (2004). "Rural Non-farm Employment in Gujarat*",* Unpublished report submitted by Agro-Economic Research Centre (AERC), Vallabh Vidyanagar, Gujarat, to the Ministry of Agriculture, GoI, New Delhi.

Fisher, T. and V. Mahajan (1998). *The Forgotten Sector: Non-farm Employment and Enterprises in Rural India,* London: Intermediate Technology Publications.

Ghosh, J.K., V. Datta and A. Sinha (2004). "Rural Non-farm Employment in West Bengal*"*. Unpublished report submitted by Agro-Economic Research Centre (AERC), Shantiniketan, West Bengal to the Ministry of Agriculture, GoI, New Delhi.

Gogoi Bharati (2004). "Rural Non-farm Employment in Assam"*,* Unpublished report submitted by Agro-Economic Research Centre (AERC), Jorhat to the Ministry of Agriculture, GoI, New Delhi.

Gopalappa, D. V. (2004). "Rural Non-farm Employment in Karnataka*"*, Unpublished report submitted by Agriculture Development and Rural Transformation Unit of the Institute of Economic and Social Change, Bangalore to the Ministry of Agriculture, GoI, New Delhi.

Government of India (1994). *Report of the Technical Committee on DPAP and DDP*, Ministry of Rural Development, New Delhi.

----------(2001). *Report of the Task Force on Employment Opportunities*, Planning Commission, July 2001.

----------(2002). *Special Group on Targeting Ten Million Employment Opportunities Per Year,* Planning Commission, May 2002.

----------(2004). *Economic Survey 2003-04,* Economics Division, Ministry of Finance, GOI, New Delhi.

Grover, D.K. and Sanjay Kumar (2004). "Rural Non-farm Employment in Punjab"*,* Unpublished report submitted by Agro-Economic Research Centre (AERC), Ludhiana, to the Ministry of Agriculture, GOI, New Delhi.

Harriss, B. and J. Harris (1984). "Generative or Parasitic Urbanism? Some Observations from the Recent History of a South Indian Market Town", in J. Harris and M. Moore (eds), *Development and the Rural Urban Divide*, London: Frank Cass, pp. 82-101.

Hazell, P.B.R. and S. Haggblade (1991). "Rural-Urban Growth Linkages in India", *Indian Jl. of Agricultural Economics,* Vol. 46, No.4, pp. 515-529.

Hossain, M. (1988). "*Nature and Impact of the Green Revolution in Bangladesh*,*"* Research Report no. 67, International Food Policy Research Institute, Washington, D.C. USA.

Islam Nurul (1997). The Non-farm Sector and Rural Development: Review of Issues and Evidences*, FAED paper no. 22*, IFPRI, Washington DC.

Jha, B. (2005). Rural Non-farm Employment in India, A coordinated and consolidated unpublished report, submitted to Ministry of Agriculture, GOI, New Delhi.

_____ (2006). "*Employment, Wages and Productivity in Indian Agriculture"*, IEG Working Paper Series No. E/266/2006.

Kajale, Jayanti (2004). "Rural Non-farm Employment in Maharashtra"*,* Unpublished report submitted by Agro-Economic Research Centre (AERC), Pune to the Ministry of Agriculture, GOI, New Delhi.

Kumar, Amalendu (2004). "Rural Non-farm Employment in Bihar", Unpublished report submitted by Agro-Economic Research Centre (AERC), Bhagalpur to the Ministry of Agriculture, GoI, New Delhi.

Lanjouw, P. and A. Shariff (2002). "Rural Non-farm Employment in India: Access Impact and Poverty Impact", *Working Paper Series* N. 81, National Council of Applied Economic Research (NCAER), New Delhi.

Lewis, W. A., (1954). "Economic Development with Unlimited Supplies of Labour", *The Manchester School*, Vol. 22, No. 2, pp. 242-258.

Lipton, M. (1983) "Poverty, Undernutrition and Hunger", *World Bank Staff Working Paper No.* 597, Washington: World Bank.

Mahendra Dev, S (2000). "Economic Reforms, Poverty, Income Distribution and Employment", *Economic and Political Weekly*, Vol. 35, No. 10 (March 4).

Mellor, John W. (1978) *The New Economics of Growth – A Strategy for India and the Developing World,* A Twentieth Century Fund Study, Ithaca : Cornell University Press.

Mishra, B. K. (2003). "Rural Non-farm Employment in Uttar Pradesh*",* Unpublished reports submitted by Agro-Economic Research Centre (AERC), Allahabad to the Ministry of Agriculture, GOI, New Delhi.

NABARD (1992). *Refinance Assistance for Non-Farm Sector Activities,* NABARD*,* Mumbai.

Nayyar, Rohini (1998). "An Assessment of Wage Employment Programmes", in R. Radhakrishna and A. N. Sharma (ed.), *Empowering Rural Labour in India: Market, State and Mobilisation* published by, Institute for Human Development, New Delhi.

National Sample Survey Organisation (NSSO, 1990). *Results of the Fourth Quinquennial Survey on Employment and Unemployment (All India), NSS Fortythird Round (July 1987- June 1988)*, NSS Report no. 409, New Delhi.

---------- (NSSO, 1997). *Employment and Unemployment in India, 1993-94, NSS Fiftieth Round (July 1993-June 1994),* NSS Report no. 409, New Delhi.

---------- (NSSO 2001). *Employment and Unemployment Situation in India, 1999-2000, NSS Fifty-fifth Round (July 1999-June 2000),* NSS Report no. 458, Key Results, Part-I, Part-II, New Delhi.

Papola, T.S. (1987). "Rural Industrialisation and Agricultural Growth: A Case Study in India", in Islam Rizwanul, (eds.) *Rural Industrialisation and Employment in Asia,* ILO / ARTEP, New Delhi.

_____ (2005). "A Universal Programme is Feasible", *Economic and Political Weekly*, Vol. (40), No.7 (February 12): 594-599.

Patnaik, P. (2005). "On the Need for Providing Employment Guarantee", *Economic and Political Weekly,*Vol.40, No. 2 (January 15): pp. 203-207.

Rajiv Gandhi Foundation (2000). *Panchayati Raj in India Status Report 1999,* Rajiv Gandhi Task Force on Panchayati Raj, New Delhi.

Saith, A. (1991). "Development Strategies and the Rural Poor", *Journal of Peasant Studies* 17(2): 171-243.

Saleth, R.M. (1999). *Strategic Linkages in Rural Diversification: Empirical Analysis and Policy Issues*. New Delhi: Commonwealth Publishers.

Sen, Abhijit (2003). "Globalisation Growth and Inequality in South Asia- The Evidence from Rural India", in Jayati Ghosh and C. P. Chandrasekhar (eds), *Work and Well being in the Age of Finance,* New Delhi : Tulika Books.

Shah, Mihir (2004). "National Rural Employment Guarantee Act: A Historic Opportunity", *Economic and Political Weekly,* Vol. 39, No.49 (December 11): 5287-5290.

Sidhu, R. S. and Sukhpal Singh (2004). "Agricultural Wages and Employment in Punjab," *Economic and Political Weekly*, Vol.39, (September 11): 4132-4135.

Srivastava, A. (2004). "Rural Non-farm Employment in Madhya Pradesh", Unpublished reports submitted by Agro-Economic Research Centre (AERC), Jabalpur to the Ministry of Agriculture, GOI, New Delhi.

Srivastava, Ravi (1997). "Poverty Reduction in India: Economic Growth, Human Development and Anti-poverty Programme", a background paper for the World Bank.

Swaminathan, R. (2004). "Rural Non-farm Employment in Tamilnadu*",* Unpublished report submitted by Agro-Economic Research Centre (AERC), Chennai to the Ministry of Agriculture, GOI, New Delhi.

Tuteja, U. (2004). "Rural Non-farm Employment in Haryana*"*, Unpublished report submitted by Agro-Economic Research Centre (AERC), Delhi to the Ministry of Agriculture, GOI, New Delhi.

Uma Rani and Jeemol Unni (2004). "Unorganised and Organised Manufacturing in India- Potential for Employment Generating Growth" *Economic and Political Weekly,* Vol. 49, (October 9): 4568-4580.

Unni, J. (1997). 'Non-Agricultural Employment, Livelihoods and Poverty in Rural India*",* Working Paper No. 88, Ahmedabad: Gujarat Institute of Development Research.

Unni, Jeemol, N. Lalitha, and Uma Rani (2001). "Economic Reforms and Productivity Trends in Indian Manufacturing", *Economic and Political Weekly,*Vol..36, No. 41, pp. 3915-3922.

Vaidya, C.S, M.L. Sharma and N.K. Sharma (2004). "Rural Non-farm Employment in Himachal Pradesh", An unpublished reports submitted by Agro-Economic Research Centre (AERC), Shimla to the Ministry of Agriculture, GoI, New Delhi.

Vaidyanathan, A. (1986). "Labour Use in Rural India: A Study of Spatial and Temporal Variations", *Economic and Political Weekly*, Vol.21, No. 52 (December 27): A130-A146.

---------- (1994). "Employment Situation: Some Emerging Perspectives," *Economic and Political Weekly*, Vol.29, No. 50 (December 10): 3147-3156.

Visaria, P. and R. Basant (1994). "Non Agricultural Employment in India: Problems and Perspective", in P. Visaria and R. Basant (ed.) *Non Agricultural Employment in India*, New Delhi: Sage Publications

Vyas, V. S. and G. Mathai (1978) "Farm and Non-Farm Employment in Rural Areas: A Perspective for Planning" *Economic and Political Weekly*, Vol.13, No. 6 and 7, (February annual number): 333-347.

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ANNEXURES

Anx. Table 1: Selected States Districts with Rural non-farm Employment percent and its Important Correlates												
Parameters	**DK**	**RC**	**KTA**	**SR**	**WM**	**MHT**	**NB**	**EG**	**ANP**	**MS**	**BD**	**GUJ**
Population density per sq km (PDS)	416	241	275	267	196					419	482	258
Infrastructure develop.index (%) (INFI)	95.87	94.34	106.12	110.02	86.6	106.8	118.46	108.8	104.01	98.5	95.03	105.33
Value of production (rs/hect) (PHAO)	14852	13099	12194	8557	6672	6693	13049	36882	13419	6283	6352	10188
Value of agril prodn (rs/capita) (PCAO	4866	2512	3085	2234	2856	1648	1905	5486	2234	1883	1080	2506
RNFE per cent	46.8	10.2	16.1	20	12	16.9	26.5	20.7	17.1	23.3	15.3	19.6

Param.	**BIH**	**KP**	**JT**	**LN**	**BT**	**PNB**	**GR**	**JN**	**HYN**	**DM**	**MN**	**KJ**	**UP**	**KK**	**TNU**	**JG**	**BN**	**WB**
PDS	496	563	354	804	336	482	599	440	470		709.2	542.9	689.4	957				904
INFT	91.3	104.72	110.73	185.82	162.52	171.9	113.5	122.24	133.12	76.4	118.79	103.16	112.04	159.6	145.62	76.51	87.76	102.1
PHAO	7864	9318	7110	16784	4965	15059	8404	10893	13749	4834	21287	12212	10690	39284	26084	7046	12394	13628
PCAO	808	949	1223	3595	2058	5248	2003	5462	4455	1690	3461	2065	1800	2552	3124	997	2034	1584
RNFE%	18.68	21	14	61.5	30.1	44	51.6	24.4	26.2	27.3	31	21.1	25.6	77	29	21.3	19.3	26.5

Note: Most of the above information is obtained from individual state reports of the AERC; information for these parameters pertains to different years, these are generally for the mid-90s. Some of this information was supplemented with the secondary sources.

Anx Table 2: Spatial and Temporal Trends in Agriculture, Employment, Rural Poverty and Some of Poverty correlates												
	Annual average rate of growth in per cent during 80s (1993-83) and 90s (1999-93)								Per cent change in ratios during 80s and 90s			
	Agric. performance		Labour productivity		Non-farm empl'ent		Real Agr wages		Rural poverty		Aggregate poverty	
STATES	80s	90s	80s	90s	80s	90s	80s	90s	80s	90s	80s	90s
Andhra Pradesh	3.6	0.7	-1.2	1	1.6	1.2	3	2.9	-10.6	-4.9	-6.7	-6.4
Assam	1.5	0.7	-0.8	0.8	2.9	9.2	2.2	0.7	2.4	-5	0.4	-4.8
Bihar	-0.3	1.3	-2.8	0.3	1.9	2.9	3.8	1.6	-6.2	-13.9	-7.3	-12.4
Gujarat	-2.1	1.3	-3.3	0.4	4.9	3.2	-0.1	1.5	-7.6	-9	-8.6	-10.1
Haryana	9.6	2.3	5.7	0.8	3.6	3.9	4	2	7.5	-19.8	3.7	-16.3
Himachal Pradesh	5.8	6.1	1.6	4.9	5.6	3.3			13.3	-22.4	12	-20.8
Karnataka	5.8	6.1	1.6	5	2.3	1.6	5.3	1.9	-6.5	-12.5	-5.1	-13.1
Kerala	6	2.1	1.5	7.9	1.4	5.7	5.5	6.4	-13.3	-16.4	-15	-12.7
Madhya Pradesh	4.8	1.3	2.3	1	0.6	3.7	4.7	5.3	-7.5	-3.6	-7.3	-5.1
Maharashtra	6.3	1.9	2	1.6	0.6	2.9	7.6	1.7	-7.3	-14.2	-6.6	-11.8
Orissa	1.2	-2.5	-1.6	-1.4	0.1	2.1	5.8	1.3	-17.8	-1.7	-16.7	-1.4
Punjab	6.1	2.3	2.5	1.2	4.6	2.2	4.4	-1.9	-1.3	-5.6	-4.4	-5.6
Rajasthan	-0.4	7.6	-1.6	5.4	6.9	2.3	-1	1.3	-7	-12.7	-7.1	-12.1
Tamil Nadu	8.3	2.4	4.7	3.6	2	0.9	5.5	-0.9	-21.5	-11.9	-16.6	-13.9
Uttar Pradesh	2.5	2.8	0.1	3.1	2.3	2.6	2.6	2.7	-4.2	-11.1	-6.2	-9.7
West Bengal	6	4.2	2.7	4.6	5.8	-0.3	10.9	0.7	-22.3	-9	-19.2	-8.6

Anx. Box I. Regressing Agricultural Performance on Rural Non-Farm Employment

Agriculture performance as measured by agriculture income (Rs. per hectare of cultivable land) is regressed on rural non-farm employment (per cent of RNFE in total employment) in states. The OLS estimates with log-linear form of specification for three most commonly used reference years, namely, 1983, 1993-94, 1999-00 are presented below:

Year 1983,	RNFE(ln) = -0.022 + 0.783AGRI(ln)		$R^2 = 0.855$	N = 17
t-stat	(0.07)	(9.77)		
Year 1993-94,	RNFE(ln) = -0.481 + 0.799AGRI(ln)		$R^2 = 0.837$	N = 17
t-stat	(1.19)	(9.11)		
Year 1999-00,	RNFE(ln) = -0.022 + 0.744AGRI(ln)		$R^2 = 0.772$	N = 17
t-stat	(1.16)	(7.43)		

The R-square values suggest that the relationship between agriculture and rural non-farm employment is quite strong. The elasticity coefficients are highly significant (high t-values in parentheses) in all the equations. The strength of this relationship has however reduced over the years (decreasing R-sq).

Anx. Table 3: Average Number of Economic Activities for an Average Worker in Specific Employment Category in Sample Villages during the Year 2002--3

	Karnataka				Andhra Pradesh				Gujarat				Himachal Pradesh				Bihar			
Employment category	**c1011**	**c1015**	**c1023**	**c1027**	**c1211**	**c1215**	**c1223**	**c1227**	**c1311**	**c1315**	**c1323**	**c1327**	**c1411**	**c1415**	**c1423**	**c1427**	**c1511**	**c1515**	**c1523**	**c1527**
Cultivators & agri. Labour	1.8	1.4	1.4	1.3	1.6	1.4	1.6	2.0	1.4	1.6	1.5	1.8	2.1	1.9	2.5	2.0				
Self-emp in manufacturing,	1.4	1.5	1.1	1.5	1.3	1.1	1.2	1.4	1.3	1.0	1.3	1.6	2.0	1.9	2.8	2.1	3.5	2.5	4.4	3.3
Self-emp in construction	1.1	1.1	1.3	1.2	1.3	1.1	1.1	1.0	0.7	1.6	1.3	1.1	1.6	1.5	3.0	2.3	3.4	1.9	2.3	2.5
Self-emp in trade & services	1.0	1.1	1.7	1.0	1.1	1.2	1.2	1.4	1.4	1.5	1.3	1.5	1.9	1.9	3.0	2.2	1.0	1.0		
Non-agricultural wage labour	1.2	1.3	1.5	1.4													4.4	2.8	4.8	
Regular emplm in non-agric	1.2	1.1	1.2	1.3					1.3	1.4	1.7	1.7								
Average of all categories	1.3	1.3	1.4	1.3	1.3	1.2	1.3	1.4	1.2	1.4	1.4	1.5	1.9	1.8	2.8	2.1	3.1	2.0	3.8	2.9
	Assam				**Punjab**				**Madhya Pradesh**				**Uttar Pradesh**				**West Bengal**			
Employment category	**c2111**	**c2115**	**c2123**	**c2127**	**c1711**	**c1715**	**c1723**	**c1727**	**c1811**	**c1815**	**c1823**	**c1827**	**c2011**	**c2015**	**c2023**	**c2027**	**c2211**	**c2215**	**c2223**	**c2227**
Cultivators & agri. Labour	2.2	1.5	1.5	1.6	1.4	1.3	1.3	1.3	1.6	2.0	1.5	2.0	6.4	3.7	5.6	4.5	1.2	1.6	1.5	1.5
Self-emp in manufacturing,	1.3	1.3	1.7	2.0	1.4	1.1	1.3	1.3		1.5		1.3	3.3	2.5	2.0	3.0	1.0	1.4	1.3	1.3
Self-emp in construction	1.3	1.0	1.8	1.9	0.5	0.5	0.5		1.4	1.9	1.6	2.0					1.1	1.5	1.2	1.0
Self-emp in trade & services	2.0	1.9	1.1	1.4	1.3	1.2	1.4	1.3	1.5	1.4	0.5	1.7					1.1	1.3	1.2	1.4
Non-agricultural wage labor	1.5	1.0	1.3	1.5	1.1	1.0	1.0	1.4					5.3	2.7	3.8	4.2				
Regular emplm in non-agric		1.0		1.3	1.2	1.1	1.0	1.2					3.3	2.8	2.0	4.3				
Average of all categories	1.7	1.3	1.5	1.6	1.2	1.0	1.1	1.3	1.5	1.7	1.2	1.7	4.6	2.9	3.3	4.0	1.1	1.4	1.3	1.3

Note: In 4 digit code, first two digits indicate state (details see Box II in the text), third digits (1) and (2) present high and low RNFE districts, respectively while fourth digit depicts village clusters near and away from town (1) and (5), respectively in high RNFE district while (3) and (7) in low RNFE district.

Source: AERC Survey

Anx. Table 4: Average nos. of Sources of Income in an Average Rural Family in Selected States and Chosen Districts during the Reference Period (2002-03)

	Karnataka				Tamilnadu				Gujarat				Himachal Pradesh			
Family income category	**c1011**	**c1015**	**c1023**	**c1027**	**c1911**	**c1915**	**c1923**	**c1927**	**c1311**	**c1315**	**c1323**	**c1327**	**c1411**	**c1415**	**c1423**	**c1427**
Agri & allied activity	2.7	2.8	2.1	2.3	2.3	2.4	2.5	2.1	3.0	3.5	1.1	3.1	3.0	3.0	3.0	4.0
Agricultural labour	2.3	2.3	2.3	2.3							2.0	4.0				
Self-emp in manufacturing,	2.0	2.1	2.7	2.5	2.1	2.5	2.2	2.5	1.0	1.3	1.7	1.3	2.0	2.0	2.0	3.0
Self-emp in construction	2.7	2.7	1.8	2.4	2.1	2.2	2.3	2.4	3.0	3.2	2.7	1.2	4.0	2.0	3.0	2.0
Self-emp in trade	1.7	1.8	2.0	2.0	2.0			2.1	1.6	1.8	2.4	2.4	2.0	2.0	3.0	
Self emp in services					2.0		2.2	2.0								
Non-agricultural wage labour	2.5	2.7	2.1	2.0		2.2	2.0									3.0
Regular emplm in non-agric	3.0	3.1	2.3	2.8					1.5	2.2	2.3	2.3				
All industry/empl category	2.4	2.5	2.2	2.3	2.1	2.3	2.2	2.2	2.0	2.4	2.0	2.4	2.8	2.3	2.8	3.0

	Assam				Punjab				Madhya Pradesh				Maharashtra		
Family income category	**c2111**	**c2115**	**c2123**	**c2127**	**c1711**	**c1715**	**c1723**	**c1727**	**c1811**	**c1815**	**c1823**	**c1827**	**c1111**	**c1115**	**c1123**
Agri & allied activity	4.1	3.6	4.0	2.8	1.9	2.0	3.0	0.5	2.8	2.8	2.7	3.0	2.6	2.4	2.5
Agricultural labour	4.5	4.0	2.3	2.0	1.0		1.3	1.0	2.6	2.7	1.9	2.5	2.2	2.2	1.7
Self-emp in manufacturing,	3.0	2.7	2.7	4.0	2.0	1.3	1.2	1.4	2.3	2.4	2.5		2.3	2.5	2.0
Self-emp in construction	3.4	4.5	2.8	3.2	0.5	0.5	0.5	0.5	2.3	2.3	1.7	2.7	2.0	2.5	2.2
Self-emp in trade	4.7	4.0	4.3	3.5	1.4	1.4	1.5	1.3	3.0	2.3		1.6	2.4	2.0	2.1
Self emp in services									3.0	1.8	2.7	2.0			
Non-agricultural wage labour	3.0	3.5		2.5	1.1	1.0	1.0	1.3		2.3	0.0				
Regular emplm in non-agric	3.5	3.5	2.7	2.8	1.2	1.1	1.0	1.3							
All industry/empl category	3.7	3.7	3.1	3.0	1.3	1.2	1.4	1.0	2.6	2.4	1.9	2.3	2.3	2.3	2.1

Notes: In the four-digit code description, first two digits depicts states (details see in Box 2), in third digit (1) and (2) depicts high and low RNFE districts, respectively while fourth digit indicates village clusters, near and away from town (1,5 and 3,7) in high and low RNFE concentrated districts, respectively.
Source: AERC Survey

Anx Table 5A: Employment Status in per cent Within the Industrial category in Sample Villages Near Town in a High RNFE District												
	Haryana			Madhya Pradesh			Assam			Maharashtra		
Industrial category	**self-emp**	**salaried**	**casual**	**self-emp**	**salaried**	**casual**	**self-emp**	**salaried**	**casual**	**self-emp**	**salaried**	**casual**
Agri. & allied activities	44.4	44.5	11.0	88.0	11.0	158.0	0.0	0.0	0.0	101.0	101.0	183.0
Manufacturing, etc	18.2	36.4	45.5	50.0	0.0	70.0	71.4	0.0	28.6	71.0	42.0	67.0
Construction	52.9	11.8	35.3	67.0	0.0	89.0	85.7	0.0	14.3	42.0	50.0	92.0
Trade and hotels	0.0	100.0	0.0	40.0	0.0	100.0	90.9	0.0	9.1	195.0	20.0	0.0
Trans+stor+comn.	5.6	38.9	55.6	67.0	0.0	67.0	42.9	28.6	28.6	50.0	50.0	75.0
Total aggregate average	23.9	43.3	32.8	55.0	5.0	75.0						

Anx Table 5B: Employment Status in per cent Within the Industrial Category in Sample Villages Away (more than 10 km) from Town in a high RNFE district												
	Haryana			Madhya Pradesh			Assam			Maharashtra		
Industrial category	**self-emp**	**salaried**	**casual**	**self-emp**	**salaried**	**casual**	**self-emp**	**salaried**	**casual**	**self-emp**	**salaried**	**casual**
Agriculture and allied activities	76.9	7.7	15.4	161.0	29.0	137.0	0.0	0.0	0.0	155.0	25.0	148.0
Manufacturing, etc.	20.8	16.7	62.5	69.0	6.0	63.0	85.7	0.0	14.3	61.0	42.0	61.0
Construction	33.3	0.0	66.7	40.0	0.0	80.0	80.0	0.0	20.0	100.0	25.0	63.0
Trade and hotels	0.0	72.7	27.3	133.0	67.0	33.0	100.0	0.0	0.0	200.0	50.0	75.0
Trans+stor+comn.	9.1	54.6	36.4	100.0	0.0	0.0	27.3	45.5	27.3	0.0	33.0	89.0
Total aggregate average	27.4	30.7	41.9	68.0	16.0	52.0						

Source: AERC Survey