

GROWTH AND TRENDS OF RURAL NON-FARM SECTOR EMPLOYMENT IN INDIA: REFLECTIONS FROM NSSO DATA IN THE POST REFORM PERIOD

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ABSTRACT

Today it has become very important to increase income and employment in our country because our country is trying to find new income opportunities. The growth of the rural non-farm sector is the most useful and important in new income opportunities because if we increase we will find that the income of the farmers has also increased directly as we know that GDP of our country has reached -23.9%. so that it's time to find new opportunities in rural non-farm sector through this the income of farmer's increases for developing and providing employment to the rural workforce, accretion dominance of crop production, followed by beastly husbandry was observed across major states . The allotment of fishery and forestry was negligible in employing the rural workforce. The research has say that the accretion of rural non-farm employment has an absolute and cogent effect on minimizing rural abjection at an all-India level. An absolute link between income and employment has also perceived in rural nonfarm activities. An efficiently designed area-specific program should be acquired to advise improve the accomplishment of the rural workforce, which in turn would profitable for getting employment in the rural non-farm sector

Keywords: Rural employment, Rural non-farm sector employment

JEL Classification: J21, O15, O18.

INTRODUCTION

Today, about 70% of India's population is involved in agriculture and more than 75% of the people live in rural areas. This means that our country is still far behind and due to lack of employment our country cannot achieve progress. There is also a need to increase employment today. The Rural non from sector offers an alternative that allows us to create income and employment in the rural sector, which

can lead to an increase in India's per capita income because we know that GDP is continuously falling in our country. To prevent this, it is mandatory to increase in employment because due to the creation of employment, the per capita income in our country can increase the present situation of the rural non-farm sector is a 6 percent share in the agricultural industry today. If we improve it, then our country can progress, we all know that the cost in the agricultural industry goes up many times? Farmers are unable to recover their costs and suffer losses

due to which they are also forced to commit suicide, so we have to look at those options which include high cost and high profit with low cost. This is present only in the rural non-farm sector. If we will increase employment, then we will find that our farmers are getting more employment and do not depend on agriculture themselves but instead increase our income through many options or if we promote the non-farm sector then. It offers the option due to which we can help the people of our rural areas and provide them permanent employment because we know that government schemes not give better employment and income to the farmers, so we need to give them an option and this option is in the rural non-farm sector. It can be given only by the increasing growth rate in the rural non-farm sector, India is not that high in this sector, but still, if we pay attention, we will find that the farmers of our country have been able to increase their income in this research paper, we have included the current status of the rural non farm sector which is taken from the NSSO data, in which they have told what is the current situation of the Rural nonfarm sector and also got information from many research papers. We have also tried to explain what is the reason we are not able to progress in the rural non-farm sector at the high level at which our country needs it, And if we take some important steps, then we have also grown fast, in this, we have also told how to grow rural non-farm sector One of the above failures of bread-and-butter development in post-Independent India remained its disability to decidedly reduce the assurance of workforce on agriculture. While the allotment of the gross domestic product (GDP) basic from agriculture has gone downward from over 50 percent at the time of Independence to about 14 percent currently, the allotment of workforce affianced in agriculture, which was about 70 percent in 1951, still remains at over 50 percent. This has led to the addition of a gap between incomes in horticultural and non-horticultural sectors, which is perceived to be one of the above reasons for the chain of abjection in the country. The gap amid the cardinal of new rural workers and the cardinal of new job opportunities created in agriculture is enlarging. Therefore, the

rural employment variegation appears non-agricultural area has acquired a critical accent over time. The Government of India is acutely concerned with the widespread abjection and unemployment in the rural areas and has taken several initiatives including the accomplishing of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The rural area in India is capable of transformation and the addition of rural non-farm sector to the rural income and employment is growing. Several studies on the rural non-farm sector in India accept concluded that the allotment of the non-farm area in rural employment has decidedly grown over time and the accommodation of the farm area to blot additional labor force has about reached a plateau. On the added hand, some advisers argue that with the accomplishment of large-scale employment programs alike the horticultural sector is in adverse scarcity of farm labor. It is with these accomplishments that this research paper has advised the trends and patterns of rural employment variegation, along with the implications of growing rural non-farm sector on rural poverty. It has additionally examined the factors affecting rural employment variegation appears non-farm area and the role of high-value horticultural activities in it.

CONTRIBUTION OF RURAL NON-FARM SECTOR IN ECONOMY

The rural non-farm sector is assuming an important role in the all-embracing economy of the state in the appellation of both accouterments employment befalling to altered categories of the skilled and unskilled labor force and accidental in the incomes of both acreage and non-farm households. The addition of non-farm sector has been consistently accretion in the conception of additional employment and the generation of assets in altered geographical locations over the years due to abbreviating mainland ratio and an all-embracing decline in the net able land area, besides a considerable abatement in per capita net production actuality originated from agriculture and

accompanying activities. The after-effects of these all-adverse performances of agriculture economies universally have been able-bodied recognized in terms of a significant: abatement in the absorption of the workforce in agriculture and allied activities and its consecutive shift in non-farm sector during the contempt past. However, the addition of assorted components of non-farm sector in accepted and its accomplishment segment inaccurate in the action of all-embracing development, especially in the agreement of creating employment and the bearing of income, has been realized at abundant below the level of its absolute expectations in altered areas. This largely due to bare initiatives undertaken for the regression of various advantages and opportunities that are accessible in favor of developing a variety of non-farm activities in altered locations of the accompaniment under the past development plans. Besides, several axiological problems as accomplished in terms of defective improvements in the assembly technologies, accessibility to the facilities of transports and appropriate infrastructures, continuing concentration towards the assembly of various numbers of rural area on accomplishing only the local demands for aftermost several centuries, defective development in the affection and designs of articles and accompanying features were additionally been appropriately responsible factors behind the apathetic growth of several non-farm activities and its bottom extent of contribution in the rural abridgment of the state. It can be acutely seen that about the rural households, abnormally in arresting and mountainous areas of the state, are accepting an abundant amount of assets from other than horticultural activities, either through agreeable its past' workforce in different non-farm occupations in rural areas itself or effective them to migrate outside rural areas in abreast by towns to supplement in the incomes of the households through sending remittances.

The absolute situation which presently emerges is that although the households are affianced in the agricultural activities accordingly the agriculture is emphasized as the prime activity of the

workforce of about the households in rural areas of the state. But the agricultural activities are seen as positive significant abundant with higher bulk of income as compared to assets originated from horticultural activities in the absolute incomes of the households. There are cogent differences in both per domiciliary and per capita income measurements between the agriculture and non-farm households and also, between the rural households of altered locations. The per household assets is estimated to be Rs. 18482, and it assorted highest from Rs.19.91 thousand to every man at Rs.17.30 thousand amid the households amid in average and low acropolis areas respectively. The PCI accounted for Rs.3519, which stands relatively college in average hill areas as compared to aerial and low areas. Also, the per domiciliary as able-bodied as per capita income of non-farm households is estimated to be significantly higher than the case of agriculture households in anniversary of bounded locations. This mainly due to the obvious actuality that, first, the agriculture households are deriving assets from only two sources namely; farm breadth and remittances from the migrant's family workforce while the non-farming households are noted anticipation an abundant amount of earnings from the assorted categories of non-farm activities, besides from agricultural activities and through remittances from the migrant ancestor's members. Also, the proportion of workforce affianced in assuming different other activities in rural areas was appeared rather a higher among the non-farm households as compared to farm households, admitting a bordering difference in favor of closing groups of households has appeared in the measurements of migrants to absolute workforce

METHODOLOGY

Employment variegation is the transformation of the workforce from one area to the other for employment. The part of this workforce affianced in different sectors of the economy constitutes the anatomy of employment. The present research has abstinent the extent of rural employment turn at altered levels. At the initial level, it has been

abstinent in the agreement of shifting of workforce to the non-farm sector. At the second level, part of the workforce to different sub-sectors of agriculture have been measured and the finally arrangement of rural employment variegation have been advised at all-India levee and across various states for the 1983 to 2009-10. To analyze the determinants of employment variegation towards the non-farm area and horticultural crops, and to aspect weights to these determinants, a multinomial logistic model was applied. Multinomial logistic models have been used in the case of a dependent variable with more than two categories. This type of level regression is same as logistic regression but is added general because the base variable is not restricted to two categories. Each class is compared to a reference category. The household level data from the 66th Round, Employment and Unemployment Survey, conducted by the National Sample Survey Organization (NSSO), Ministry of Statistics and Programme Implementation, Government of India, were acclimated in the admiration of the multinomial logistic model. The factors that were supposed to access the choice of employment included age, sex, education, domiciliary size, operational landholding, caste, etc. The multinomial logistic regression functions can be expressed as per Equation (1):

$$P(Y_i = j) = \frac{e^{\beta_j' X_i}}{\sum_{k=0}^2 e^{\beta_k' X_i}}, \quad j = 0, 1, 2$$

...(1)

where Y_i represents the probability that the persons are engaged in the non-farm/ horticultural activities, X_i denote the vector of explanatory variables, and β_s are the regression coefficients estimated by the maximum likelihood method. The specification and measurement of these explanatory variables have been explained in the section on results and discussion.

The interpretation of coefficients is less straightforward in logistics than the OLS model. Usually, a positive coefficient for an independent variable increases the probability of a household being upwardly mobile. However, the marginal

effects of the explanatory variables on the probabilities are not equal to the coefficients. Further calculations were required to estimate the marginal effects of each explanatory variable. The marginal effect of a variable was computed by using Equation (2):

$$\delta p(y) / \delta X_i = \beta X_i * \exp [Z] / [1+\exp(z)]^2$$

...(2)

Where Z was the sum of coefficients multiplied by the means of the respective variables plus the constant- term.

Further, the impact of the non-farm sector in rural poverty was examined by using the log-linear regression model. The log-linear model was chosen based on the significance of the regression coefficients and goodness of fit.

The regression model used is given in Equation (3):

$$\ln R_p = \alpha + \beta \ln X_i + \varepsilon_i$$

...(3)

where R_p the rural poverty in percentage, X_i are the explanatory variables which include total factor productivity, share in non-farm employment (%), the share of the non-agricultural sector in national income (%), rural wages (Rupees/day), and rural literacy (%), α is a constant term and ε_i is the error-term.

DATA

Different rounds of surveys conducted by the National Sample Survey Organization (NSSO) on employment /unemployment constituted the database of this study. The date were taken mainly from the four sequential rounds of the NSSO, about the years 1983 (38th round), 1993-94 (50th round), 2004- 05 (61st round), and 2009-10 (66th round). However, instead of alternative information from the NSSO reports, the assemblage level abstracts were extracted from the CD of NSSO. Analysis at the unit level was decidedly important because the employment estimates at added than one digit level

of the NIC allocation of industries were not accessible in the reports. To estimate employment across the sub-sectors of agriculture and altered components of the crop sub-sector, NIC allocation has been used. For authoritative an allegory of the measurements of sectoralemployment across altered periods, viz. 1983, 1993-94, 2004-05, and

2009-10, the acceding design of the NIC classifications¹, as developed by the Central Statistical Organization (CSO), was followed. However, aural the crop sub-sector, some adjustments were fabricated with the CSO-designed concordance² to analyze the called four sub-groups beyond the called years

Table 1. State-wise share of rural non-farm sector employment

| State | 1983 | 1993-94 | 2004-05 | 2009-10 | CAGR (%) | | |
|------------------|------|---------|---------|---------|-----------------|--------------------|-----------------|
| | | | | | 1983 to 1993-94 | 1993-94 to 2009-10 | 1983 to 2009-10 |
| Andhra Pradesh | 20.0 | 22.7 | 28.3 | 31.3 | 2.5 | 2.8 | 2.7 |
| Assam | 21.0 | 21.3 | 25.8 | 29.5 | 6.3 | 3.2 | 4.4 |
| Bihar | 15.6 | 16.9 | 22.1 | 33.1 | 0.2 | 7.1 | 4.4 |
| Chhattisgarh | 7.0 | 9.4 | 13.9 | 15.1 | 4.9 | 3.6 | 4.1 |
| Gujarat | 15.2 | 20.7 | 22.8 | 21.7 | 6.0 | 0.9 | 2.8 |
| Haryana | 23.1 | 28.6 | 36.0 | 40.2 | 0.6 | 3.9 | 2.6 |
| Himachal Pradesh | 12.9 | 22.8 | 30.6 | 37.1 | 8.0 | 4.8 | 6.0 |
| Jammu & Kashmir | 20.3 | 28.0 | 36.2 | 40.3 | -5.6 | 10.6 | 4.1 |
| Jharkhand | 18.6 | 23.9 | 30.1 | 45.2 | 0.2 | 5.9 | 3.7 |
| Karnataka | 15.7 | 18.3 | 19.1 | 24.3 | 4.2 | 1.9 | 2.8 |
| Kerala | 37.2 | 42.3 | 58.0 | 64.3 | 1.3 | 3.9 | 2.9 |
| Madhya Pradesh | 11.0 | 13.8 | 17.5 | 17.6 | 2.0 | 4.6 | 3.6 |
| Maharashtra | 14.3 | 20.3 | 20.1 | 20.6 | 4.0 | 1.8 | 2.7 |
| Odisha | 20.9 | 21.9 | 31.0 | 32.4 | 1.6 | 3.5 | 2.8 |
| Punjab | 17.8 | 22.7 | 33.2 | 38.2 | 3.2 | 3.3 | 3.3 |
| Rajasthan | 13.5 | 19.2 | 27.2 | 36.7 | 5.8 | 5.6 | 5.7 |
| Tamil Nadu | 25.6 | 31.3 | 34.7 | 36.3 | 3.8 | 0.5 | 1.7 |
| Uttar Pradesh | 17.9 | 20.7 | 27.4 | 33.1 | 3.1 | 4.2 | 3.8 |
| Uttarakhand | 18.1 | 34.9 | 21.8 | 30.5 | 1.1 | 5.4 | 3.7 |
| West Bengal | 26.4 | 26.9 | 37.3 | 43.7 | 5.5 | 2.0 | 3.4 |
| All-India | 18.6 | 21.7 | 27.4 | 32.1 | 3.4 | 3.2 | 3.4 |

Source: Authors' estimates based on NSSO unit-level data (38th, 50th, 61st, and 66th rounds)

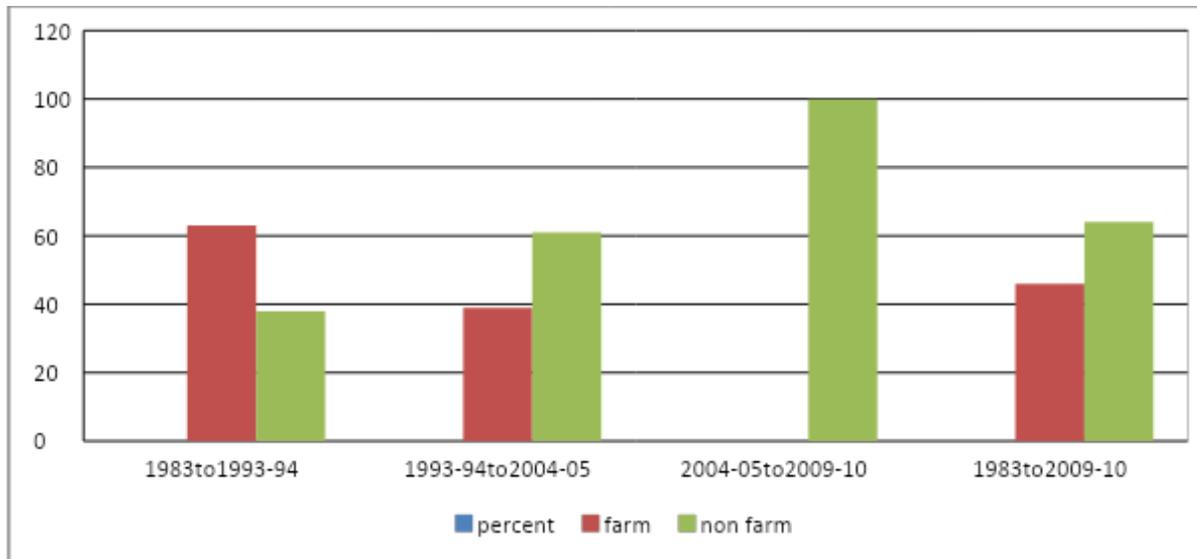


Figure1. Sources of new jobs in rural India: 1983 to 2009-10

Source: Authors' estimates based on NSSO unit-level data (38th, 50th, 61st, and 66th rounds)

Table 2. Trends and patterns of rural employment in the agriculture sector, 1983 to 2009-10 (Percent)

| Period | Crops | Animal husbandry | Forestry | Fishery |
|---------|-------|------------------|----------|---------|
| 1983 | 88.8 | 10.4 | 0.4 | 0.4 |
| 1993-94 | 92.2 | 6.8 | 0.4 | 0.6 |
| 2004-05 | 90.3 | 8.7 | 0.5 | 0.5 |
| 2009-10 | 93.2 | 6.1 | 0.2 | 0.5 |

Source: Authors' estimates based on NSSO unit-level data (38th, 50th, 61st, and 66th rounds)

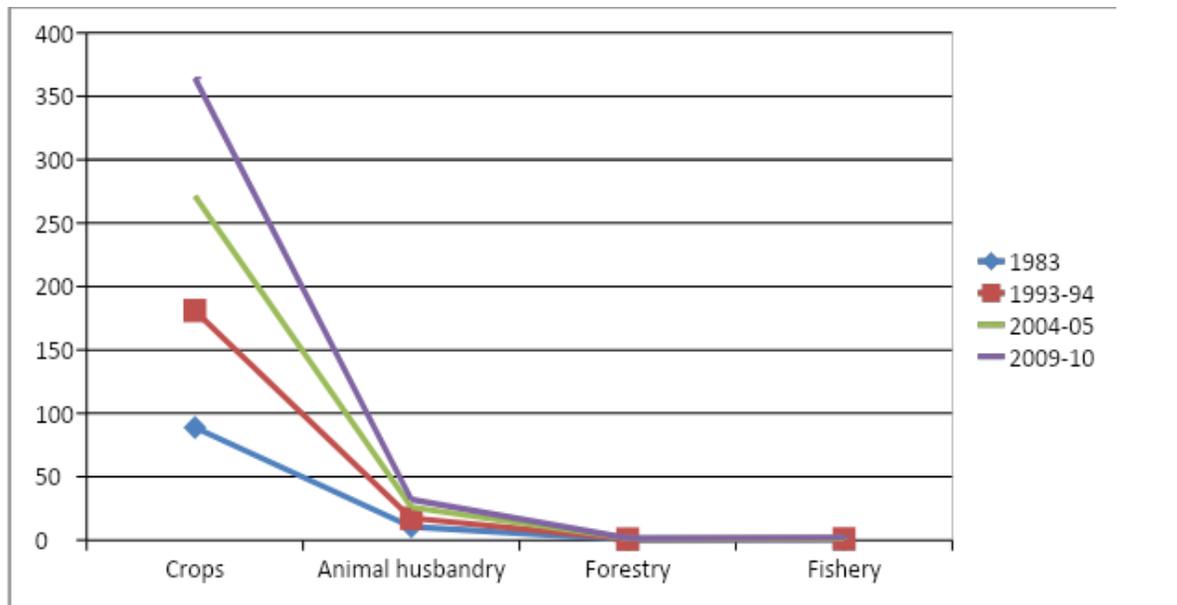


Figure-2. Trends and patterns of rural employment in the agriculture sector, 1993 to 2009-10

Source: Authors' estimates based on NSSO unit-level data (38th, 50th, 61st, and 66th rounds)

RESULTS

Rural non-farm sector in India: accelerating despite slow

In India, rural non-farm sector has undergone significant changes during the accomplished two and half decades. The allotment of agriculture in the labor force remained for a continued time, but started declining in the mid-1970s and has been down since then. On the other hand, the allotment of the rural non-farm has been increasing, and it now employs about one-third of India's rural workforce (Table 1), which amounts to engaging about 110million rural bodies in the non-farm activities. Table 1, accumulation National Sample Survey (NSS) abstracts from the 38th, 50th, 61st, and 66th rounds, provides a data of the growing importance of the non-farm in rural employment. At the all- India level, the allotment of the RNFS in total workforce has consistently over time, from 19 percent in 1983 to 22 percent in 1993-94, to about 27 percent in 2004-05 and further to 32 percent cent in 2009-10.

An essay in Table 1 reveals that the non-farm sector has emerged as the sole antecedent of additional employment opportunities in rural areas. Between 1983 and 1993-94, of the about 47 million additional rural jobs created, the majority (6 out of every 10) were in the acreage sector. But, this trend was reversed subsequently. Between 1993-94 and 2004-05, the growth in non-farm employment surpassed agriculture when about 50 million new job opportunities were created in rural areas and 6 out of every 10 new jobs were in the non-farm sector. But in contempt years between 2004-05 and 2009-10, admitting the absolute rural employment has decreased by 5 million, about 13 million additional rural jobs were created in the non-farm sector (Figure 1). In actuality during this period, the workforce of about 20 million rural bodies departed the acreage sector. The decline in job opportunities in the agriculture sector may be attributed to several factors including the accomplishing of schemes like MGNREGS. The abatement in the farm employment was acceptable to be, at atomic partly, apprenticed by distress in the agricultural area which prompted

households to seek employment more actively in the non-farm sector.

The allotment of non-farm in providing employment has been growing beyond all the states. But, the arrangement of rural non-farm employment did display stark bounded variations. In 1983, the share of the non-farm area in rural employment varied from 7 percent in Chhattisgarh to 37 percent in Kerala. In 1983, the area of the state more than 20 percent of the rural workforce was active in the non-farm sector included West Bengal (26.4%), Tamil Nadu (25.6%), Haryana (23.1%), Assam (21%), Odisha (20.9%), Jammu & Kashmir (20.3%) and Andhra Pradesh (20.0%). In actuality, the allotment of the non-farm sector in rural employment was beneath 20 percent in 1983. The allotment of non-farm areas in rural employment added in all the states over time. In 2009-10, about 64 percent of the rural workforce in Kerala was affiliated with the non-farm sector. Also, in the majority of states, non-farm employed more than one-third of the absolute rural workforce. It is clear that the process of structural transformation of the rural workforce that was steadily tilting in favor of non-farm is continuing. Structural transformation of employment in rural areas was not visible only in a few states like Chhattisgarh (15.1%), Gujarat (21.7%), Karnataka (24.3%), Madhya Pradesh (17.6%), and Maharashtra (20.6%). Besides Kerala, the non-farm sector contributed about two-fifths to the rural employment in West Bengal (43.7%), Jharkhand (45.2%), Jammu & Kashmir (40.3%), Haryana (40.2%), Punjab (38.2%), Rajasthan (36.2%), Tamil Nadu (36.3%), and Himachal Pradesh (37.1%).

Rural employment in the agriculture sector

A glimpse of turn in employment within the agriculture area during the accomplished 25 years (1983 to 2009-10) at all-India akin can be acquired from Table 2. The assurance on crop assembly not only continued but alike accentuated during this period. At the all-India level, 89 percent of the horticultural workers were concentrated in crop assembly in 1983, which increased to 93 percent in 2009-10. The animal husbandry area employed 10.4

percent of the agricultural workers in 1983, but its allotment in rural employment beneath to 6.1 percent in 2009-10, despite its college growth in the amount of output. Forestry and fishery continued to annual for agreeable negligible proportions in the rural workforce.

The arrangement of employment variegation within the agriculture area has depicted an agnate trend across different states of India. In 1983, in all the above states, except for Jammu & Kashmir, Kerala, and Punjab, agricultural employment was heavily concentrated in the crop sector, alignment from 81 percent in Rajasthan to 98.8 percent in Chhattisgarh. In fact, in as much as 11 of the 20 states studied, employment in crop production accounted for added more than 90 percent share. The overall employment scenario did not change much and the excessive assurance on crop production continued beyond states alike in 2009-10. Yet, considerable restructuring of horticultural employment was arrested in a cardinal of states. For instance, during the eon 1983 to 2009-10, Haryana has depicted remarkable access (from 17.7% to 28.6%) and Gujarat small access (from 8.9% to 10.5%) in employment in the beastly husbandry sub-sector (Table 3). On the added side, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and West Bengal accept depicted a significant abatement in employment in animal husbandry during this period. In fact various states have shown a decline in employment in animal husbandry during this period.

The addition of forestry and fishery sub-sectors to employment in the agriculture area continued to be small; in fact smaller states which depicted acceleration in employment are Kerala, Andhra Pradesh, West Bengal, Tamil Nadu, and Karnataka in the fishery area and Kerala and Uttarakhand in the forestry sub-sector. To sum up, the ascendant importance of the crop sub-sector continued in agriculture.

Impact of the rural non-farm sector on deprivation

The affiliation of abjection with agricultural and non-agricultural achievement growths and horticultural

wages has been accurate widely in the abstract. Some studies have also argued that advance in the non-farm was the key agency behind the abatement in abjection during the 1990s. Accept argued that non-farm expansion has not alone been the prime driver of rural incomes, but its advance has additionally been especially pro-poor. The actual evidence additionally suggests that rural poverty abridgment has been carefully associated with agricultural growth.

In an accomplished one and a bisected decade (1993-94 and 2009- 10), real horticultural wages grew at the amount of 2.9 percent per year. The amount of advance was college during 2004-05 to 2009-10 than in 1993-94 to 2004-05 (Table 3). The

amount of rural abjection reduction beneath along with horticultural wage advance and horticultural GDP. The abatement of rural abjection has appreciably been consistent over the accomplished one and a bisected decade at an average amount of about 2.5 percent per year.

Different sets of determinants emerged during different periods to access poverty. While numerous variables could access rural abjection directly or indirectly, AgNSDP per capita of rural person, rural literacy, absolute rural wages, non-farm employment, and commercialization of economy, accept been included to accept the determinants for rural poverty reduction in the analysis undertaken in this paper

Table 3 Trends in rural poverty, GDP and Horticultural wages

| Period | Rural poverty | Horticultural wages | Non-farm employment | (percent) | |
|--------------------|---------------|---------------------|---------------------|-----------|-------|
| | | | | GDP | AgGDP |
| 1993-94 to 2004-05 | -1.3 | 2 | 3.6 | 5.9 | 2.3 |
| | | . | | | |
| | | 6 | | | |
| 2004-05 to 2009-10 | -5.0 | 3 | 2.8 | 8.9 | 3.9 |
| | | . | | | |
| | | 4 | | | |
| 1993-94 to 2009-10 | -2.5 | 2 | 3.4 | 6.6 | 2.6 |
| | | . | | | |
| | | 9 | | | |

Source: Authors' estimates based on NSSO unit-level data (50th, 61st, and 66th rounds)

Finally, the log-linear regression models were select based on the all-embracing significance of the regression equation (F-statistics and R²), and the adherence and acceptance of the explanatory variables (Tables 4 and 5). At the civic level, TFP growth, non-farm employment, commercialization of the economy, rural accomplishment, and rural articulacy turned out to be cogent determinants of rural abjection reduction. Based on affiliated cross-sectional and time-series data at state level, AgNSDP per person, rural accomplishment, and rural articulacy have emerged as the cogent determinants of rural abjection reduction.

All the included variables are cogent and accept the accepted plausible signs. The cogent negative accessory of AgNSDP per capita suggests that the advance in horticultural performance has been associated with substantial abridgment in rural poverty, indicate the allowances of advance in agriculture accept trickled down to the rural poor and the advance has been inclusive. Horticultural productivity, an indicator of real horticultural growth, has played an important role in abjection reduction in the rural areas, as indicate its higher elasticity for abjection reduction. With a one percent advance in per capita horticultural output, the

abjection would be bargain by 0.97 percent. The agricultural advance can be accomplished through strategic and accelerated public advance in basement and apprenticeship. However, agricultural advance alone will not be acceptable to essentially reduce the accident of abjection particularly the landless households. The variegation appears rural non sector is analytical to reduce abjection in India. With one percent access in the allotment of rural non-farm employment (RNFE), the rural abjection would be bargain by 0.5 percent. The cogent poverty in China was accomplished through the adjustment of increasing RNFE opportunities.

The allotment of the non-farm area in the abridgment also plays a cogent role in rural abjection reduction. This indicates the communal roles of agriculture and non-agriculture sectors to significantly abate rural abjection in India and efforts should be fabricated to advance the rural-urban linkages The accomplishment constitutes an above component of domiciliary income for the majority of

rural households and accordingly improvement in accomplishment is additionally significant in abbreviation the abjection of these households. Hence, the rural development programs that accept direct or aberrant influence on the active conditions of the farmers and landless laborers should be accorded an accent in the accessible Twelfth Five-Year Plan to ensure inclusive growth.

Literacy helps the bodies in abounding ways. Better apprenticeship and accomplishment up-gradation accredit the individuals to booty advantage of labor bazaar opportunities and income breeding prospects. Education additionally increases acquaintance and enhances abilities to analyze opportunities in the added lucrative sectors and appropriately helps in abbreviation rural poverty. The cogent negative affiliation between abjection and suggests that apprenticeship plays an active role in rural abjection reduction, asserting greater advance in animal resource development activities in the rural areas for inclusive growth.

Table 4. Determinants of rural poverty based on time series data at all

| India | | |
|---------------------------------------|-------------|----------------|
| Dependent variable: Rural poverty (%) | | |
| Exploratory variables | Coefficient | Standard error |
| Total factor productivity (TFP) | -0.1452** | 0.0526 |
| Non-farm employment | -0.5105* | 0.1610 |
| Commercialization of economy | -0.4149* | 0.1590 |
| Rural wages | -0.6282 * | 0.2204 |
| Rural literacy | -0.6215 * | 0.0823 |
| Constant | 0.2100 | 0.0117 |
| R ² | 0.9898 | |

Note: * and ** denote significance at 1 percent and 5 percent levels, respectively.

Source: Authors' estimates based on data from NSSO and CSO, Gol

Table 5. Determinants of rural employment variegation towards non-farm and horticultural sectors in India

| Variable effects | Multinomial coefficients | | | Marginal effects | |
|--|--------------------------|----------------|--|------------------|----------------|
| | Coefficients | Standard error | | dy/dx | Standard error |
| Non-farm sector | | | | | |
| Sex of household-head (male=1, otherwise=0) | 0.0338 | 0.0581 | | 0.0075 | 0.0122 |
| Age of household head (years) | -0.0026* | 0.0014 | | -0.0007** | 0.0003 |
| Education of household head (years) | 0.1084*** | 0.0043 | | 0.0227*** | 0.0009 |
| Technical education of household-head (yes=1, otherwise=0) | 1.6391*** | 0.3673 | | 0.3825*** | 0.0749 |
| Household size (15-59 years) | 0.0971*** | 0.0126 | | 0.0214*** | 0.0027 |
| Landholding (ha) | -1.1356*** | 0.0444 | | -0.2417*** | 0.0082 |
| Caste dummy | | | | | |
| SC=1, otherwise=0 | 0.5676*** | 0.0613 | | 0.1279*** | 0.0143 |
| OBC=1, otherwise=0 | 0.5728*** | 0.0560 | | 0.1226*** | 0.0122 |
| Others=1, otherwise=0 | 0.6366*** | 0.0609 | | 0.1391*** | 0.0141 |
| Constant | -1.1672*** | 0.0981 | | | |
| Horticulture sector | | | | | |
| Sex of household-head (male=1, otherwise=0) | -0.0510 | 0.1809 | | -0.0014 | 0.0041 |
| Age of household head (years) | 0.0185*** | 0.0044 | | 0.0004*** | 0.0001 |
| Education of household head (years) | 0.0656*** | 0.0131 | | 0.0007*** | 0.0003 |
| Technical education of household-head (yes=1, otherwise=0) | 0.6146 | 0.6531 | | -0.0043 | 0.0100 |
| Household size (15-59 years) | -0.0942*** | 0.0386 | | -0.0027*** | 0.0008 |
| Landholding (ha) | -0.1682*** | 0.0370 | | 0.0042*** | 0.0009 |
| Caste dummy | | | | | |
| ST=1, otherwise=0 | -0.0546 | 0.2329 | | -0.0052 | 0.004 |

| | | | | |
|-----------------------|------------|--------|--------|-------|
| OBC=1, otherwise=0 | 0.2037 | 0.1851 | 0.0003 | 3 |
| Others=1, otherwise=0 | 0.4718*** | 0.1845 | 0.0057 | 0.004 |
| Constant | -4.2786*** | 0.3314 | | 0 |
| log-likelihood | -10190 | | | 0.004 |
| Number of observation | 55874 | | | 5 |
| Chi ² | 1503.05 | | | |
| R ² | 0.1157 | | | |

Note: ***, **, and * denote significance at 1 percent, 5 percent, and 10 percent levels, respectively.

THE ANTECEDENT OF RURAL EMPLOYMENT ASSORTMENT

RURAL NON-FARM SECTOR

A multinomial logistic model was applied to analyze the factors that actuate the achievability of employment in the rural non-farm (RNF) sector. The variables included in the best-fit models and the accompanying hypotheses have been discussed below. It was accepted that the age of the decision-maker in a house hold influences the achievability of being employed in RNF activities negatively. The elder members of a farm house hold may not be able to shift from farm to non-farm sector. Female-headed households were accepted to accept less admission to RNF activities. Apprenticeship improves individuals' abilities and affairs for non-farm jobs as able-bodied as increases adeptness to assignment efficiently for income-providing activities. Therefore, the apprenticeship level was accepted to affect the accord of workers in the RNF activities positively. The household size additionally affects accord in the rural non-farm employment. The accepted relationship amid the household size and achievability of a domiciliary being affianced in rural non-farm employment (RNFE) was positive. The households with a beyond farm-size had beneath probability of accord in RNFE.

Several occupations are affiliated to a degree in the Indian context. Therefore, it was advised worthwhile to acquire the aftereffect of

degree on RNFE. The households' per capita income may affect their members' accommodation on assurance in non-farm activities. The per capita monthly consumption amount was advised as a proxy for the per capita income of a household. A higher income enables the household members to adopt the necessary abilities and training to participating in the RNF activities. Further, the surplus money enables the households to acquire assets and equipment in the necessary accord between income and RNFE was perceived. State dummies were included to appraise the role of state-specific factors on RNFE.

The admiration results of multinomial logistic models have been presented in Table 5. Gender was found to accept a significant absolute impact on RNFE, acknowledging a bright gender divide. Its marginal effect on RNFE was additionally quite high. With one assemblage change, it added the anticipation of actuality in RNFE by 20 percent. The effect of age on the anticipation of actuality employed in RNFE was negative and significant, and advertised rigidity in shifting activities for the ancient persons. The marginal effect of age on anticipation of actuality employed in the RNF was not significant. With one unit increase in age, the anticipation of actuality employed in RNF decreased by 0.13 percent. The accord between apprenticeship and anticipation of living in the RNF area was absolute and significant. Higher the level education, higher was the anticipation of actuality engaged in the RNF sector. The apprenticeship makes the workers able to explore opportunities outside

agriculture and loosens the barrier in admission to RNFE. Technical education, which was acclimated as a proxy of skills, had a significant aftereffect on RNFE. The marginal effect of technical apprenticeship on RNFE was observed to be the highest. With an admission of one year in Technical education, the anticipation of admission to RNFE added by about 14 percent. It began that the accomplishment facilitated access into a wider market place and wider the anticipation of actuality engaged in the RNF sector.

A bigger household size began to adopt the anticipation of actuality engaged in the RNF sector. The bigger size of a domiciliary could add an affiliate to accompany non-farm activities after adversely affecting the horticultural operations. The coefficient of landholding was negative, implying a negative correlation between the measurements of size and the anticipation of actuality involved with RNFE. The marginal effect of a unit increase in landholding on non-farm employment at the agency of all variables was 0.1695, implying that if landholding decreased by one hectare, the employment in non-farm activities would be increased by 17 percent. The negative accord between farm and non-farm employments suggested that the employment variegation in rural areas was generally under distress. However, there was a multivariate effect of farm-size. Higher levels of production from buying large holdings may advance to higher consumption, which in turn, may admit the household of non-farm employment. The bigger households may accept less anticipation of joining RNFE, but actualize non-farm employment opportunities for more households.

The production linkages between farm and non- acreage sectors were strong. Unlike landholding, an absolute link between domiciliary income and non-farm employment was found. However, its accessory was abundant and its marginal aftereffect on non-farm employment was negligible. Though the coefficients of degree dummies had the accepted sign, the copy of alone scheduled tribes (STs) began significant and negative, advertence that ST households were in an adverse position vis-à-vis general degree household

in accepting non-farm employment in the rural areas of eastern India. If a domiciliary belonged to an appointed tribe category, the anticipation of non-farm employment decreased by 10 percent. The effect of state dummies was mixed. As compared to Jharkhand, the anticipation of actuality employed in RNF activities was lower in Bihar and West Bengal and college in Orissa. This implies that the anticipation of actuality engaged in RNFE decreased with admission in the level of horticultural development in a state, afresh pointing appear 'distress variegation' in the rural areas of eastern India.

HORTICULTURAL CROPS

To analyze the factors for employment in horticultural crops, a separate logistic model was estimated and the effects have been abbreviated in Table 5. Results revealed that gender, education, household size, landholding-size, and monthly per capita income had a significant influence on employment in the horticultural sub-sector in eastern India. The male-headed households had a higher probability of getting engaged in the agriculture of horticultural crops. The effect of apprenticeship was negative; implying that with an increase in education, the probability of acceptance engaged in growing horticultural crops got reduced. It may be attributed to the actuality that with access to education, people accept the higher ability of leaving agriculture and accepting employment in the high-value non-farm sector. The bigger household size had a higher probability of being engaged in the agriculture of horticultural crops because of more resource of labor bare in the cultivation of these crops.

The accord between farm size and employment in agriculture was negative, implying that smallholders had a higher probability of diversifying their activities towards the horticultural sub-sector. It has been argued by several advisers that agricultural variegation appears high-value products bypass the smallholders. However, the empirical evidence is accepted to be contrary. There

was a positive link between income and employment in the horticultural crops. The agriculture of horticultural crops is capital-intensive and labor-intensive. The higher-income households accept a higher ability to boot up this enterprise. The caste dummies were non-significant. State dummies were, by and large significant, indicating the role of state level emphasis and priorities for development and advance of the horticultural sub-sector.

CONCLUSION

The research has shown the importance of rural non farm sector in generating employment to rural workforce across major states of India. This could be beheld as one of the abeyant options to generate employment opportunities, and access food and social security and thereby abbreviate poverty in the rural areas of the country. Rural employment within agriculture has an alloyed trend (of both high and low pace) across states. For example, animal husbandry employed percentage of rural workers in Punjab (40%), Jammu and Kashmir (25%), and Kerala (17%), while it was below 5 percent in 11 out of 20 states advised in this paper. However, rural employment variegation within crop sub-sector has been visible, advancing the achievability of increasing gainful employment opportunities by shifting towards cultivation of horticulture (fruits and vegetables) and cash crops.

Variegation in rural employment towards high value crops (HVC) means their accretion role in horticultural production, which will add rural assets and therefore, accomplish more employment in the rural areas. In the animal husbandry enterprise, dairy and wider livestock are considered added pro-poor than the crop sub-sector. It is landless, marginal and small farmers that own livestock, and development of this sector will advise them in generating employment and agreeable themselves gainfully. However, the behavior needed for college growth in agriculture is an accretion of public investment.

A number of factors have been empiric affecting rural employment significantly in both non-

farm and horticultural sectors. A well-designed technical program based on the bounded conditions of the below can advise in deepening their abilities which would account for and accommodate better achievability of getting employment in the non-farm sector. Knowledge gaining/ accomplishment development may also advise in effecting the bounded people to become enterprising.

The per capita income of a household may affect the accommodation of its associates on engagement with RNF activities. After looking at the problems and their options in the rural non-farm sector, we can say that there is a lot of hope and opportunity for the farmers of our country, through which farmers can increase their income and reduce the cost and of farming. According to the research paper, it has been learned that if we improve in manufacturing and construction, we will come to the development of the rural area of our country, through which farmers can increase their income.

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