NREGA and its Impacts on Rural Wage Rates

Report submitted to

International Crops Research Insititute for Semi-Arid Tropics

By

Kalyani Sahoo

Acknowledgement

I express my deep gratitude to Dr. MCS Bantilan,(Research Program Director) , for selecting me and thus providing me with the opportunity of interning at ICRISAT, an institute of international repute and excellence.

I also express my thankfulness and indebtedness to my super visor Dr. Madhusudan Bhattarai (Principal Scientist) for always guiding me and sharing his knowledge with me without which the completion of this project would not have been possible.He took time off from his busy schedule to extend a helping hand as and when required.

My heartfelt thankfulness is also extended to Monica mam, Varalakshmi mam for helping me with their knowledge.

My special Mr. Atul Kulkarni (Scientific Officers),Mr. Kiran, Mrs. C. Pamela, Mrs. Deepti Rajan and Mrs. Padmini Haridas (Administrative Officers) for their unending support.

I also thank Mr. Jagadeesh and Mr. Lakesh for sharing their database with me.

On this occasion I would take the opportunity to thank my parents who have always been with me through thick and thin and also my friends and colleagues for believing in me and thus being a pillar of support throughout.

DECLARATION

I do here by declare that the dissertation entitled upon **"NREGA and its impacts on Rural wage rates in India"** is an original and independent record of project work undertaken by me under the supervision of **Dr.Madhusudan Bhattarai(Principal Scientist,RP-MIP) at International Crops Research Institute for the Semi-Arid Tropics(ICRISAT**),Patancheru, India, during the period of my study as a part of curriculum of Master in Agribusiness Economics.

Hyderabad   By

Date : 12th july, 2013   Kalyani Sahoo

Title - NREGA and its impacts on Rural Wage Rates

Name – Kalyani Sahoo

Institute- Gokhale Institute Of Politics And Economics

Supervisor- Dr. Madhusudan Bhattarai

Submitted On – 12th July'2013

Abstract :

The MGNREGA is a huge public works programme and is considered as a major reason responsible for the resultant rising farm wages. This paper has tried to look into the various impacts of MGNREGA on the agricultural wages as well as how MGNREGA impacts the non-farm sector wage rates, based on the secondary data for a period of 2000-10. This study has also analysed the major factors which are contributing to the increasing agricultural wages. After FGD and survey in Dokur, the findings of those two-day field trip is also mentioned in this paper. Using the secondary data, regression models have been constructed using male and female agricultural wage rates, mason wage rates as dependant variables. The independent variables used are MGNREGA intensity with rural population and net sown area,literacy rate, cropping intensity, and irrigation intensity. The results show that the MGNREGA impacts the female agricultural wage rate and also the male wage rate. It has no impacts on mason wage rates. Different factors are operating for both male and female agricultural wage rates.

Keywords : MGNREGA,Agricultural wage rates, non-farm sector, literacy rate

CONTENTS	PAGE NO.

List of Tables

List of Figures

1.Introduction

India is a developing economy , the nature of unemployment , therefore , sharply differs from the one that prevails in industrially advanced countries .In India there is the prevalence of chronic under-employment or disguised unemployment in the rural sector and the existence of urban unemployment among the educated classes .It would be worthwhile to emphasize here that unemployment in developing economies like India is a consequence of shortage of capital equipment or other complementary resources.

According to N.S.S.O data (19th round) , the Committee on Unemployment estimated that 8.5 million persons in rural areas and 1.2 million persons in urban areas were working less than 14 hours per week. They were so severely unemployed that Committee preferred to treat them as "nearly unemployed" and included them in the category of unemployed. Besides this , 23.50 million persons working less than 28 hours per week were severely under –employed. Similarly, 3.4 million persons working 15 to 28 hours per week were severely under-employed . Taken together 26.9 million persons were severely unemployed.

1.1 Background

India is an agricultural country where, 72.2% of the population lives in rural areas (2001 census). Though India has completed more than 60 years of independence poverty in rural India continues to increase day by day and people are increasingly migrating to the urban areas to earn their living. In other words, even after completing 60 years of independence we have more than 40 per cent people living below poverty line. The EGS is a policy of direct transfer to the poor through the provision of public works (Drèze and Sen, 1991; Lipton 1996; von Braun, 1995)

Some of the **major employment programmes** launched are as follows :

Swaranjayanti gram swarozgar yojna (**SGSY)**

It was launched from April 1, 1999 after restructuring the IRDP and allied schemes. The objective is to bring the self-employed above the poverty line by providing them income generating assets through bank credit and government subsidy. Up to December 31, 2009, 36.78 lakh self help groups have been formed and 132.81 lakh swarojgaries have been assisted.

SAMPOORNA GRAMEEN ROZGARYOJANA **(SGRY)**

It was launched on September 25, 2001 and aims at providing additional wage employment in rural areas. This scheme has cash and food grains component and the Centre bears 75% & 100% of the cost of the two.

THE SWARANA JAYANTI SHAHRI ROZGAR YOJANA (SJSRY)

It was launched on December 1, 1997. The revamped SJSRY has five components-(a) the Urban Self Employment Program, (b) the Urban Women Self Help Program, (c) Skill Training for Employment Promotion among Urban Poor , (d) Urban Wage Employment Program, (e) Urban Community Development Network.

PRIME MINISTER'S ROZGAR YOJANA

It was designed to provided self-employment to more than a million educated unemployed youth by setting up of seven lakh micro-enterprises under Eighth Five Year Plan. In the First 3 years of the plan, loans were distributed in 5.0 lakh cases which provided employment to 7.4 lakh persons.

THE NATIONAL RURAL EMPLOYMENT PROGARMME (NREP)

It was started as part of the Sixth Plan and continued under the Seventh Plan. The NREP was meant to help that segment of rural population which largely depends on wage employment and has virtually no source of income during the lean agricultural period. The scheme was centrally sponsored and its financial burden was to be shared between the Centre and State government on 50:50 basis.

THE RURAL LANDLESS EMPLOYMENT GUARANTEE PROGRAM (RLEGP)

It was started on 15th August 1983, with the objective of expanding employment opportunities for the rural landless. The program aimed at providing guarantee of employment to at least one member of the landless household for about 100 days in a year.

JAWAHAR ROZGAR YOJANA

It was launched in February 1989 for intensive employment creation in 120 backward districts. It was superior to the NREP/RLEGP .Under JRY there was a clear change in the priorities in favour of economically productive investments etc. The objective of the scheme was the creation of durable assets and infrastructure at the village level so as to increase opportunities for sustained employment to the rural .

THE EMPLOYMENT ASSURANCE SCHEME **(EAS)**

The scheme aimed at providing 100 days of unskilled manual work on demand to two members of a rural family in the age group of 18 to 60 years in the agricultural lean season within the blocks covered under the scheme.

Almost every Five Year Plan and many other poverty alleviation programmes for the rural poor have come up with different income generation or employment Guarantee Schemes. Their result seemed to be unsatisfactory.

Recognizing this humanitarian crisis , the government of the United Progressive Alliance (UPA) at the Centre made a commitment that it would immediately enact an Employment Guarantee Act. Thus, in February 2006 an act named *"National Rural Employment Guarantee Act"* was introduced. The act provides legal guarantee of employment to every household for 100 days in a financial year.

It covers all the rural districts of India. From 2nd October,2009 MGNREGA has been renamed to Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNERGS). The most important priority of this programme was to provide security and enhance livelihood of the poor people residing in the rural India.

MGNREGA is supposed to alleviate rural poverty, but the operational dimensions of the MGNREGA have been subject to much debate regarding the efficacy and targeting of the act. It has attracted mixed reactions from economists and policy analysts. Much has been written about in favour and against the programme. Some argued that the MGNREGA was unnecessary because in any case poor agricultural workers had a very low unemployment rate (*Business Standard*)

1.2 MGNREGA-a brief

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005 seems to be a more advanced and radical scheme which directly gives a right to employment. This scheme has been implemented all over the country in selected districts. A family, which is listed under BPL, is entitled to get work for 100 days in a year.

The most unique feature of this programme is that it is *the right based approach of employment.* The notion that public works programme can provide a strong social safety net through

redistribution of wealth and generation of meaningful employment has been integral to the Indian policy-making agenda. The MGNREGA (2005) is currently a major part of this agenda.

It attempts to bridge the gap between rich and the poor in the country. Moreover one of its major pre requisites is that women should be the ultimate beneficiaries. MGNREGA is in implementation for the past seven years and is not just a mere employment generation for the rural people in India but the regeneration of the whole village economy in India.

FUNDING :

Table no.1 Funding Pattern of MGNREGA

COMPONENT	CENTRAL SHARE	STATE SHARE
Unskilled labour	100 percent	-
Wages for Skilled labour and semi-skilled labour	75 percent	25 percent
Other components	Administrative expenses as may be decided by the central government	Unemployment allowance payable in case wage employment was not provided within 15 days of application
Employment Guarantee Councils	Administrative expenses of the Central Employment Guarantee Councils	Administrative expenses of the State Employment Guarantee Councils

Source : CAG report

Figure no. 1 Total expenditure of all the states under MGNREGA in the year 2012-13
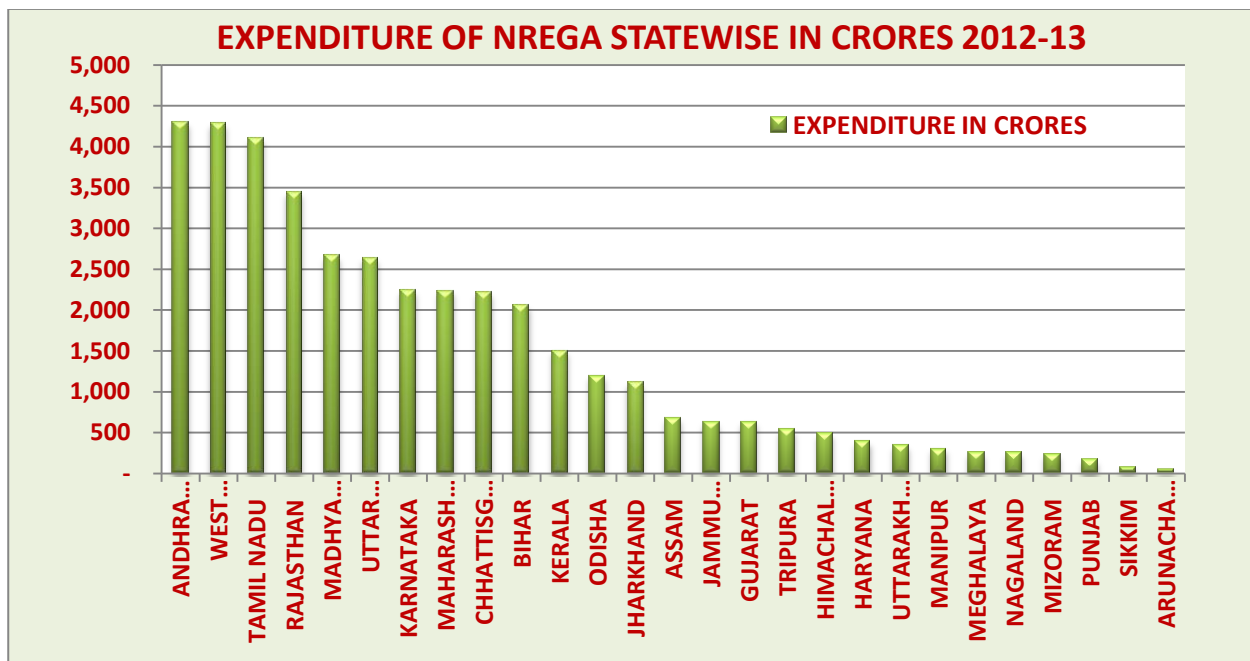
In the above figure we can see that Andhra Pradesh ranks 1st among all the states in India for the expenditure under MGNREGA.

1.3 Agricultural Wage Rates And MGNREGA

The MGNREGA provides a particularly good opportunity to study the labor market impacts of a large workfare program. Started in 2006, the MGNREGA provides short –term manual work at a wage comparable to or higher than the market rate. According to the government records, 2010-11 the MGNREGA provided 2.3 billion person days of employment to 53 millions households making it the largest workfare program in operation today. (Rosenzweig , 1978 ; Topalova, 2010) Wage rates are set at state level, and MGNREGA workers are either paid a piece-rate or a fixed daily wage. Under the piece rate system, which is more common, workers receive payment based on the amount of work completed(e.g. volume of dirt shoveled).

Theory suggests that public works have three potential effects on welfare: a direct effect on those employed in the works; a labor market effect related to the shift in labor demand; and an increase in productivity related to the public goods into which the labour is invested.(Ravallion (1990)

Furthermore, by linking the wage rate for such work to the statutory minimum wage rate, and guaranteeing work at that wage rate, such a scheme is essentially a means of enforcing that minimum wage rate on all casual work, including that not covered by the scheme. The existence of such a program can radically alter the bargaining power of poor men and women in the labor market, and also poor people living in not-so-poor families, by increasing the reservation wage (the fall-back position if a bargain is not struck). They may then benefit even if they do not in fact participate in the program. A scheme such as this can also provide valuable insurance against the many risks faced by India's rural poor in their daily lives. Even those who do not normally need such work can benefit from knowing it is available. This can help in checking the risky investments.

There are several reasons why India and MGNREGA provide a good context in which to study theimpact of public works programmes on wages. First, MGNREGA is a huge programme by any standards and is therefore of considerable interest in itself. In the financial year 2010–11, it generated 2.57 billion person-days of employment. Evaluations of small pilot schemes are often criticized on the basis that the observed effects may not be scalable; that critique certainly does not

apply here, and any lessons learned will be of broad interest. Second, empirical studies of the wage effects of public works programmes are rare in part because of the difficulty associated with finding reliable wage data. The availability of good wage data at a disaggregated regional and temporal level is a great advantage of the Indian context. Third, the scheme was introduced in 2006 and extended to all of India in 2008 in three distinct phases. The phased rollout allows us to use difference-in-differences estimation as our identification strategy. In other words, the districts in which NREG was already present, or not yet present, provide information on contemporaneous non-NREG wage increases, so that the estimated effect due to MGNREGA is net of other trends. Fourth, India is a large and diverse country. The federal structure provides ample empirical variation, while also making internal validity easier to defend than for cross-country studies. (Berg,et al 2012)

1.4 Recent Public Policy Issues On Wage Rates

(i)Bhopal (MP) – Serious Irregularities Like Non-Submission Of Utilization Certificates And Delay In Payment Of Wages To Beneficiaries Among Others Have Come To Notice in an official report on the implementation of MGNREGA scheme in Madhya pradesh. it was also found that the state government was not following necessary budgetary procedures while seeking grant from the centre under the flagship programme. as per guidelines, a ratio of 60:40 has to be followed while spending money on labour and material under the mahatma gandhi national rural employment guarantee act scheme. the cost of the scheme is shared between the centre and the state in the ratio of 90:10.

(ii)THIRUVANTHAPURAM(KERALA)- 20TH MAY 2013:The state MGNREGA (National Rural Employment Guarantee Act) cell is set to introduce e-FMS (electronic fund management system) for the MGNREGA labourers in the state. The new system which is most likely to be launched in June aims at real time transfer of money for the beneficiaries. The e-FMS scheme involves disbursement of wages of MGNREGA beneficiaries directly to their bank accounts through core-banking. All the funds will be pooled in a common bank. Depending upon the daily list of beneficiaries to be paid, a large list will be prepared. This will be approved by the head of the local body and a fund transfer order will be automatically generated. A command will be sent directly to the main bank following which funds will be disbursed in the accounts of the beneficiaries. The system has been successfully maintained in states like Karnataka and Odisha.

(iii)15TH May, 2013, Moneycontrol.Com' Did Indira end bonded labour or Sonia? MGNREGA's tall claims-' This statement was made by Mrs Sonia Gandhi and mostly

revealing the vested interests for the promoting her party for the forthcoming general elections.The article talks about the tall claims made by the UPA government in favour of MGNREGA and apparently due to MGNREGA there is no more bonded labour. "Thirty-eight years ago, Indira Gandhi had abolished bonded labour and now Sonia Gandhi wants the print and TV media to announce that there's no bonded labour anymore."

1.5 Hypothesis

After having an overview of how MGNREGA works and what it is about, the hypothesis set for my study is as follows:

 1.NREGA has no significant impacts on recent increased wage rate trend and its structures in rural India.

 2.NREGA has no impacts on the existing wage gap between male and female agricultural workers.

The next chapter gives us the clear picture of the objectives and scope of this study. The third chapter explain or rather contains the quotes of different eminent persons on MGNREGA and agricultural wage rates. This chapter is followed by the methodology chapter which explain in detail the modelling part and the statistics analysis part of the three models as well. Then we come to the results and discussion part which will provide us with answers to our hypothesis as it contains the three regression tables. Then , finally the conclusion and implications part detailing the key findings of this report.

2 .Objectives and Scope of the Study

2.1 Objectives of the study

The main objective of the study was to go through the different wage rate structures and its relationship with MGNREGA, to get an overview of the whole situation of NREGA at present.To know the expenditure , funds available, impacts, drawbacks of the programme was an important objective.

The specific objectives of the study are:

1. Assess, synthesize and review the historical trend of the rural wage rate in India and its impacts.

2. To analyze impacts of NREGA selected parameters relating to rural wage rates.

3. To evaluate differential impacts of NREGA on agricultural labor wage rates of men and women.

4. To draw policy implications on the above issue related to NREGA and its implementations.

2.2 Scope of the Study

 The scope of the study is to synthesize the data we have and reach to a consensus.To carry on the studies further we have used secondary data. For analysis regression has been done taking appropriate dependant and independent results. Regression models have also been constructed using equations which help us in explaining the results with more clarity. With the help of these tables and equations we will reach to a consensus.

3. Review Of Literature

3.1   Review of major public policy documents on MGNREGA and Wages

Now as we come to the review section, we can start by laying down the main views of CAG and CACP on the rural wage rates in India.MGNREGA was considered as the main weapon of the government for the poverty reduction as well as for the employment generation in the rural india.The report which I have studied for the analysis is the second performance audit of the MGNREGA and the period covered in this report is from April 2007 to march 2012.

The key findings of this report are :

The analysis shows that there has been a significant decline in per rural household days in 2011-12. A substantial decline in the proportion of the works completed in 2011-12.

The gram panchayats are required to prepare an annual development plan on the basis of the recommendations of the gram sabha. After checking 1012 GPs ,in states like Punjab, Uttar Pradesh it was found that the work was not complete or not even started at many places The funds for IEC were misutilised and this might have affected the beneficiaries also. There is shortage of Gram RozgarSahayaks in many states and it ranges from 20-93 percent. Excess of funds were released by the central government either due to wrong calculation or without taking the note of the balances with the states.Nonpayment/underpayment of wages was found in many states. No compensation was also paid for the delayed wage payment even.In10 states and four UTs, governments had not constituted the social audit units to facilitate the social audit forums.An effective evaluation and monitoring system is yet to be established at the central level. Other then some few field visits by the council members there has been no other initiative has taken.

3.2   Review of key literature and peer review studies on factors determinants of wages

The major finding of the CACP report is that 'the growth 'pull' factors seem tohave influenced more the rise in farm wages since 1990-91 than the 'push' factor of MGMGNREGA.Econometric analysis and time series analysis is done on data sets of 16 major states for the period 1990-91 to 2011-12 and it shows that both 'push' and 'pull' factors have played a significant role in rising real farm wages. But the impact of growth variables (GDP(overall) or GDP (agri) or GDP(construction)) is almost 4-6 times higher than the MGNREGA impact.The results point to the fact that the 'pull strategy' is more desirable than the 'pushstrategy', meaning growth oriented investments are likely to be a better bet for raising rural wages and lowering poverty than the welfare oriented MGNREGA schemes.(Gulati et al 2013)

With regard to status of the employment only 96 described themselves asfully employed. 497 were half-employed, whereas 475 unemployed ; An analysis of the averages wages paid in the different types of workacross districts shows that in many instances, the wages paid are evenbelow the minimum agriculture wage level decided by the government(Rs. 50 per day for Gujarat, Rs. 73 for Rajasthan and Rs. 63 for Madhya Pradesh) (jaswal et al, 2007)

MNREGS fails to guarantee jobs in MP ; job scheme wages through aadhar launched in Jharkhand ; Gardens seek shield from job scheme ; the minimum wages issue between the centre and the Karnataka government ; labourers getting 1-10 rs in Karnataka and rajasthan under MGNREGA ; Khadi weavers of vidharba to be included soon ; Migration due to low wage rates on the rise ; (samu,2012)

The first three years of the programme have also shown that MGNREGA suffers from many ills leakages and delays in wage payments, non-payment of statutory minimum wages, work only for an average of 50 days per annum as against the promised 100 days, fudged muster rolls, few durable assets and even fewer sustainable livelihoods. There needs to be a renewed focus on improving the productivity of agriculture and convergence to engender allied sustainable livelihoods. MGNREGA is not the usual run-of-the-mill relief and welfare programme of the past. It is not merely about transferring cash to people in distress. (member of planning commission, 2009)

The number of days workedin a year with the implementation of MGNREGA programme has significantly increased to 201 days, reflecting16 per cent increase ; In the total income, the contribution of agriculture is the highest (63%), followed by non-agricultural income(29%) and MGNREGA income (8%). Implementation of MGNREGA works has led to labour scarcity to thetune of 53 per cent and 30 per cent for agriculture operations like weeding and sowing, respectively. Therehas been a decline in area for labour-intensive crops like tomato and ragi to the extent of 30 per cent due to MGNREGA implementation.(basavraj et al, 2011)

The agricultural sector has not suffered due to lack of availability of labour, if any, as the foodgrain yield estimates show a per year increase of 2.5% from 2004-2009 which may be due to monsoons or increased productivity due to asset creation under MGNREGA or a general change in technology in agriculture leading to higher yield growth rates during 2004-09 ; It seems that the role played by MGNREGA in increasing agricultural wages may have been confounded by an increase in agricultural productivity over the same period. With the currently available data, at least, it is not possible to conclusively substantiate the claim that rising agricultural wages are a

consequence of a decrease in the labour supply due to the introduction of MGNREGA.(mahajan, 2012)

MGNREGA has a significant positive impact on the wages of female casual workers-real wages of female casual workers increased 8% more in MGNREGA districts compared with the increase experienced in non-MGNREGA districts. However, the impact of MGNREGA on wages of casual male workers has only been marginal (about 1%). (azam, 2012)

The comparision of wage rate during 2009 vis-à-vis pre-MGNREGA year2005 reveals sizable increase in wage rate of all types of labour activities. Theincrease in wage rate was highest (88.05%) for non-agricultural male labourand lowest (24.32 %) for mining works. In 2006, only 10.00 percent villages experienced shortagewhereas in 2009, 50.00 percent villages experienced shortage of wage labour.In all sample villages, after MGNREGA, wage of casual labour for non-agriculturalworks recorded noticeable increase. All households believed that MGNREGA enhanced the labour cost of agriculture and in turn enhanced the cost of production of crops upto 20 percent. After MGNREGA, households consumption in respect of food itemsimproved in 80.00 percent villages. The good impact of MGNREGA is seen on education front. The enrollment of children in school recorded good increase anddrop-out ratio declined.(Shah and Makhwana,2011)

Average MGNREGA boosts the real daily agricultural wage rates by 5.3 per cent. It takes 6 to 11 months for an MGNREGA intensity shock to feed into higher wages. The wageeffect appears to be gender neutral and biased towards unskilled labour ; It remains significant even after controlling for rainfall; district and time fixed effects; and phase-wise linear, quadratic, and cubic time trends. (Berg et al ,2012)

Haryana's average daily wage rate has increased to Rs. 179, the accolades for which is accredited to the effective implementation. According to the official MGNREGA website, the *Danta* district of *Bhilwara*, *Rajasthan* has been able to combat **migration of rural men** and women to cities, thanks to the MGNREGA which was implemented in the district. A 2010 report by Livemint.com states, "Till January, 481,912 households had been given MGNREGA job cards in Bhilwara district and 386,734 provided employment under the scheme. Of these, 116,095 have completed 100 days of work this fiscal."workers in Rajasthan often complain of the wages being paid to them with a time lag of 3 − 4 months while the official deadline for the payment of wages is 15 days.

Although payment to wage labourersis made through Post Office accounts, audits in cities of Rajasthan have revealed that a lot of money is credited to false accounts of persons who either do not exist or have no knowledge of the money being transferred to their accounts. (Mittal, 2011)

3/4th of the people who demand employment are provided by the GP ; 100 rs is the min wage for both men & women AND Sikkim has proactively involved the nationalized banks in the payment ; zumsa[2] ; innovative initiations have been witnessed here; has broken the norm of unequal wages btw men & women. (Dandekar et al , 2010)

3.3 Major Reasons For The Rising Wage Rates :

After the field survey the major reasons gathered for the increasing labour wage rates are as follows :

(a) There are very typical cases of shortage of labour in the rural villages of india due to the shifts of the people from farm to non-farm sector. Lack of technical assistance to the farmers, unavailability of enough land for cultivation are some of the main reasons of the farmers for their shift.

(b) Machine labor substituting human labour operations like land preparation, leveling, transplanting and harvesting/ post harvest handling. Consequently more investment on machine labour.

(c) If we take weeding as a special case, then the availability of labour for this operation has been shrinking on the account of the scarcity and skill factors. Therefore chemical weed control is widely adopted due to this shortage. The weed control expenses reflect the substitution of labour with chemicals.

(d) The changing attitudes and preferences of the young generation towards agriculture directly leads to rising wages as well. They are looking for stable employment or other casual works in the non farm sector.

(e) The physical drudgery associated with farming and aspects like lower social status also prompted for this changed social preference.

(f) The widening supply-demand gap in labour market impacted the observed rise in wage rates.

(g) Traditionally , weeding is exclusively a women activity ; chemical weed control practices have substituted a sizeable women labor employment. This gives rise to the negative externalities.

(h) At the same time, construction sector in India is growing over 20% per annum, non- farm sector is growing; a pulling of labor out of agriculture to non-farm areas.

(i) It is not clear, whether MGNREGA alone is responsible for rising wage rate or other factors in the economy. In-depth assessment on the issue is central focused task **here.**

3.4   Review on MGNREGA and agricultural productivity

We are talking about agricultural wage rates, then it is inevitable to mention about the agricultural productivity. As we know that wage rates are directly related to the agricultural productivity so, below is the review assessment of some literature related to this topic.

The main objective is to enhance the livelihood security of the poor households in rural areas of the country by providing 100 days of guaranteed wage employment along with it another major objective is also providing the village community with assets that would further enhance the agricultural productivity of that community.

Thus the types of work undertaken under this programme should be such which are of direct significance to agriculture. Works such as irrigation, water conservation, land development, rural connectivity, drought proofing have direct significance to agriculture. Even the works of rural connectivity have much importance in the agriculture sector. These assets have been helpful in improving the structural conditions of agriculture in a number of ways. The MGNREGA has resulted in substantial increase in the market wages of both agricultural and non-agricultural labourers.

(mnregs and its effects on agriculture, T. Haque)

One of the main reasons for the decline in agriculture productivity is the corrosion of the top layer of soil due to floods and erosion. There is also lack of investment in this sector due to which the preventive steps for the declining growth in agricultural productivity cannot be taken.

Works related to water & soil conservation, afforestation and land development were given top priority under the NREGS. The water management (WM) works specifically includes; a) water conservation and water harvesting; b) drought proofing; c) irrigation canals; d) provision of irrigation facility to land owned by households belonging to SC/ST or to land of the beneficiaries

of land Reforms/Indira AwasYojana/BPL families; e) renovation of traditional water bodies; f) land development; and, g) flood-control and protection works. (GOI 2008)

4.Methodology and Data

The data for the entire study is secondary data . It is the panel form of data.In statistics and econometrics, the term panel data refers to multi-dimensional data frequently involving measurements over time. Panel data contain observations on multiple phenomena observed over multiple time periods for the same firms or individuals. In biostatistics, the term longitudinal data is often used instead, wherein a subject or cluster constitutes a panel member or individual in a longitudinal study. Time series and cross-sectional data are special cases of panel data that are in one dimension only (one panel member or individual for the former, one time point for the latter.) Panel data allows you to control for variables you cannot observe or measure like cultural factors or difference in business practices across companies; or variables that change over time but not across entities (i.e. national policies, federal regulations, international agreements, etc.). This is, it accounts for individual heterogeneity.

The state level real agricultural wage rate data was available in (Usami,2011).

Using the Panel form of data, the regression models have been constructed. Such variables have been chosen which will help us in capturing the impact of MGNREGA on wage rates which is my major objective.

To know the impact between these two, we have calculated the MGNREGA intensity using the Rural Population and Net Sown Area. We needed a MGNREGA variable to relate to the agricultural wages of both unskilled and skilled labour. Under the skilled labour , we have taken the real wage rates of Mason and under the unskilled labour we have taken the real agricultural wage rates of both men and women. This would serve the purpose of my second hypothesis also. Other variables taken are related to the agricultural wage rates or have some emphasis on the wages. The reason behind taking skilled and both unskilled labour is to compare the impacts of MGNREGA on the wage rates of these three labourclassses. Under real agricultural wage rates, the operations which have been taken into account are Sowing(male),Weeding(female), Harvesting(male), Harvesting(female).The summary statistics table will give a clear picture of the different variables taken.

4.1 Table no.2   Summary statistics table

Description of the variables	Unit	Sample Mean

Dependant variables :		
Avg. Male Wage Rate (real)	Rs/ day	22.03
Avg Female Wage Rate (Real)	Rs/ day	16.01
Avg Mason Wage Rate (real)	Rs / day	37.53
Independant variables :		
MGNREGA Intensity with Rural Population	Rs 100/ head	2.91
MGNREGA Intensity With Net Sown Area	Rs 100 /ha.	15.9
Literacy Rate	%	71.01
Cropping Intensity	%	1.40
Irrigation Intensity	%	1.38

The summary statistics table states the different variables (dependant and independent), units, sample mean used in the regression analysis further. The MGNREGA intensity with rural Population was calculated by dividing the MGNREGA expenditure by the Rural Population and similarthe MGNREGA Net Sown Area

For the regression analysis fixed effects panel model was run. As I have selected three dependant variables and five independent variables so I will have three models. The equations for the models are as follows :

4.2 Statistical Analysis

Equation for:

Model 1

$$Y1 = a_{it} + b_1x_{1it} + b_2x_{2it} + b_3x_{3it} + b_4x_{4it} + b_5x_{5it}$$

Model 2

$$Y2 = a_{it} + b_1x_{1it} + b_2x_{2it} + b_3x_{3it} + b_4x_{4it} + b_5x_{5it}$$

Model 3

$$Y3 = a_{it} + b_1x_{1it} + b_2x_{2it} + b_3x_{3it} + b_4x_{4it} + b_5x_{5it}$$

Where ;

Dependant variables -

Y1 =Male real agricultural wage rate

Y2=Female real agricultural wage rate

Y3=Mason real wage rate

i = Cross-section(15states)

t= time period (2007-10)

Independent variables-

X1 = MGNREGA intensity of rural population

X2 = MGNREGA intensity of Net Sown Area

X3 = Literacy Rate

X4 = Cropping Intensity

X5 = Irrigation Intensity

The time period is from 2007-10 because MGNREGA started after 2005 so we had to capture the impact only for 2007-10.

5. Results and Discussions

After going through all the data and running the regression, I have divided this section into three parts. The different results interpreted from these methods used are quite significant. We have been able to capture the impacts of NREGA on the rural wage rates. Graphical Relationships show the contrasting pictures mainly, Andhra Pradesh and Gujarat. Andhra Pradesh has been chosen because MGNREGA expenditure is the highest in this State and Gujarat, because its Agricultural wage rates are either constant or declining as the farm sector is not growing with the same pace as that of non-farm sector. The Regression tables reflect which of the variables are significant and insignificant to the wage rates. Then,the FGD held in Dokur also gave us some results. The three sections are as follows :

5.1 Graphical Relationships: Below are some figure which indicate us that how MGNREGA is a causal factor for the rising wages.

Figure 2 : All India Average Agricultural Wage Rates
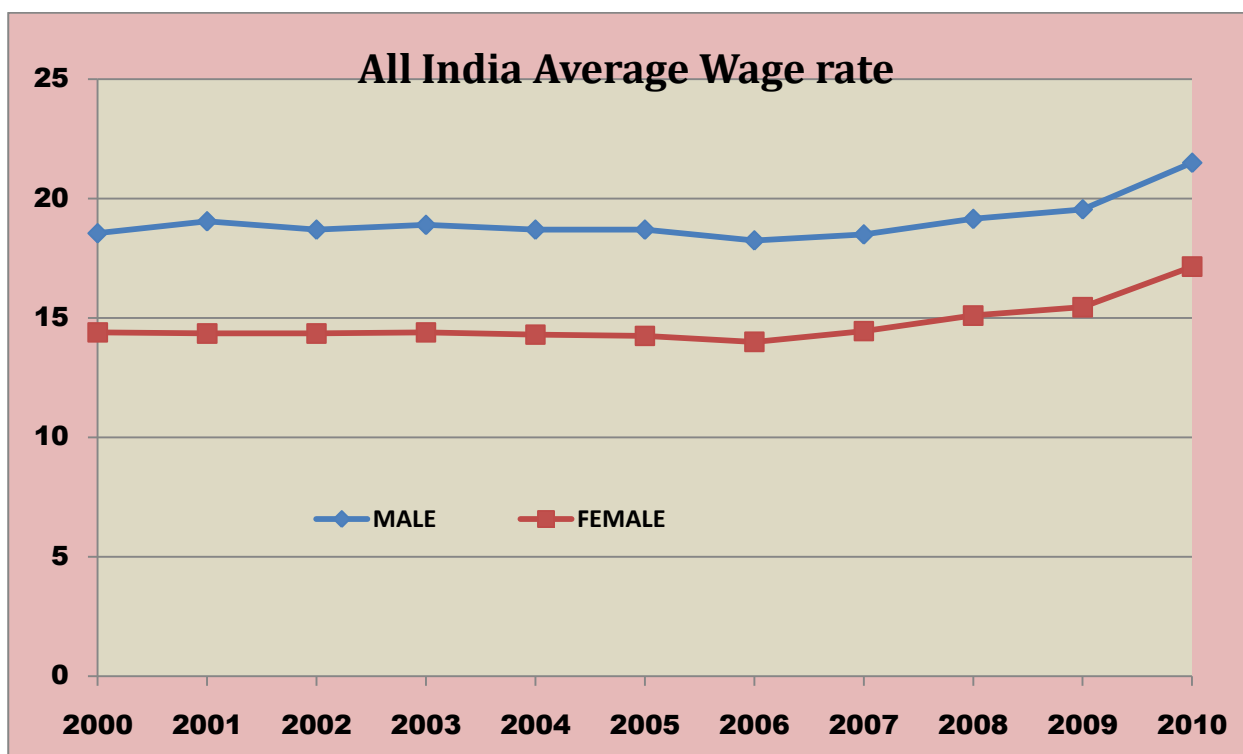
The above figure shows us the trend for the agricultural wage rates for both male and female. We can see here that the wage rates for both the male and female are showing a

constant trend till 2006 and then from 2007-10 we can witness an upward trend. This shows after the introduction of MGNREGA, the wage rates are showing an upward trend.

Figure 3: Comparison of Real Agricultural wage rates for AP and Gujarat
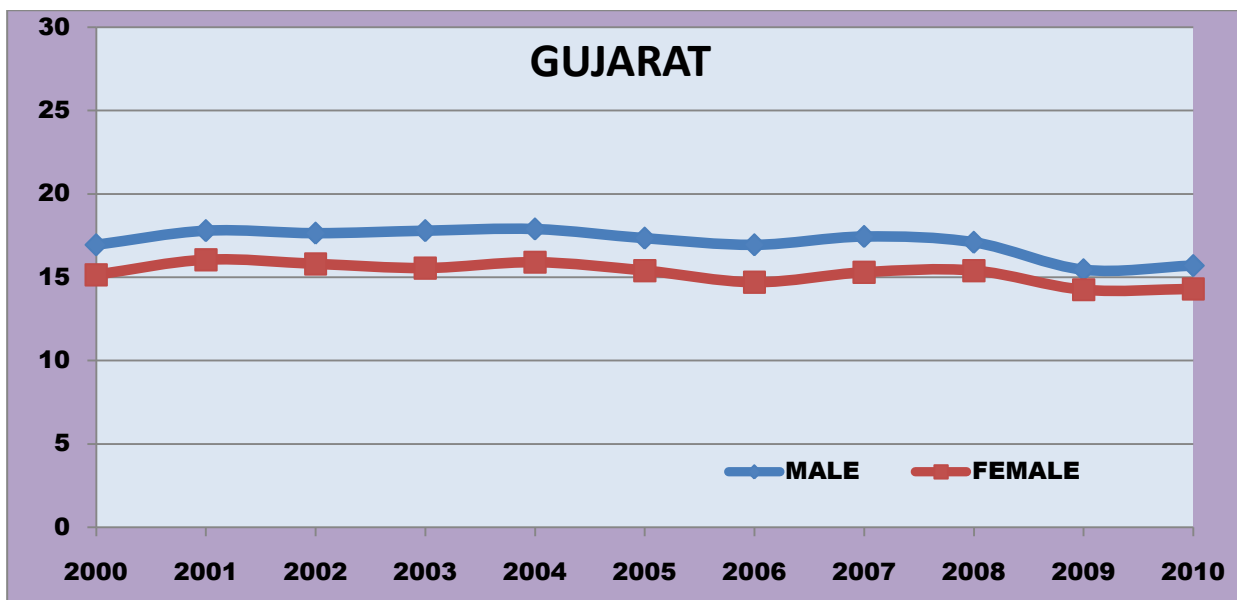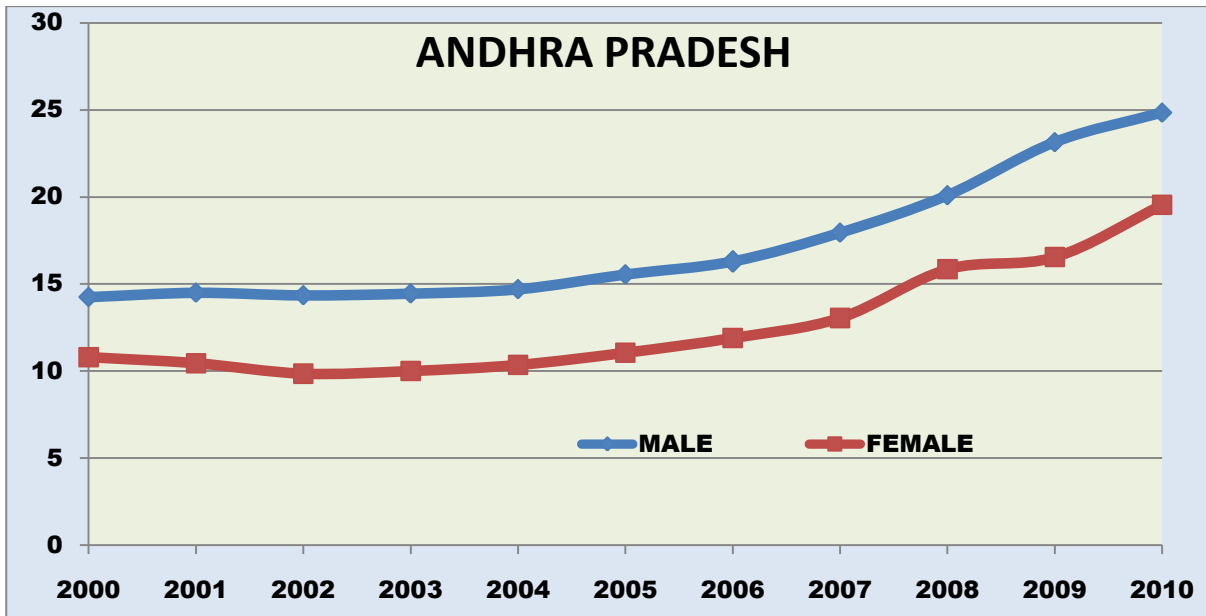
In the above two figures we can see the average real agricultural wage rates for two states i.e Andhra Pradesh and Gujarat. In case of Andhra Pradesh we can see clearly that the wage rates are showing an increasing trend. MGNREGA works are very much successful

here and it may be the reason for the rise in wages over the years. Whereas in case of Gujarat the trend is either decreasing or constant over the years. The non-farm sector is growing rapidly in Gujaratwhile the farm sector is not growing with the same pace.Moreover, MGNREGA is not that much successful here as in AP and the mode of implementation is also very slow. This might be the cause behind such a contrasting picture.

Figure 4 : Real Agricultural wage rates and MGNREGA intensity with Rural Population In Andhra Pradesh
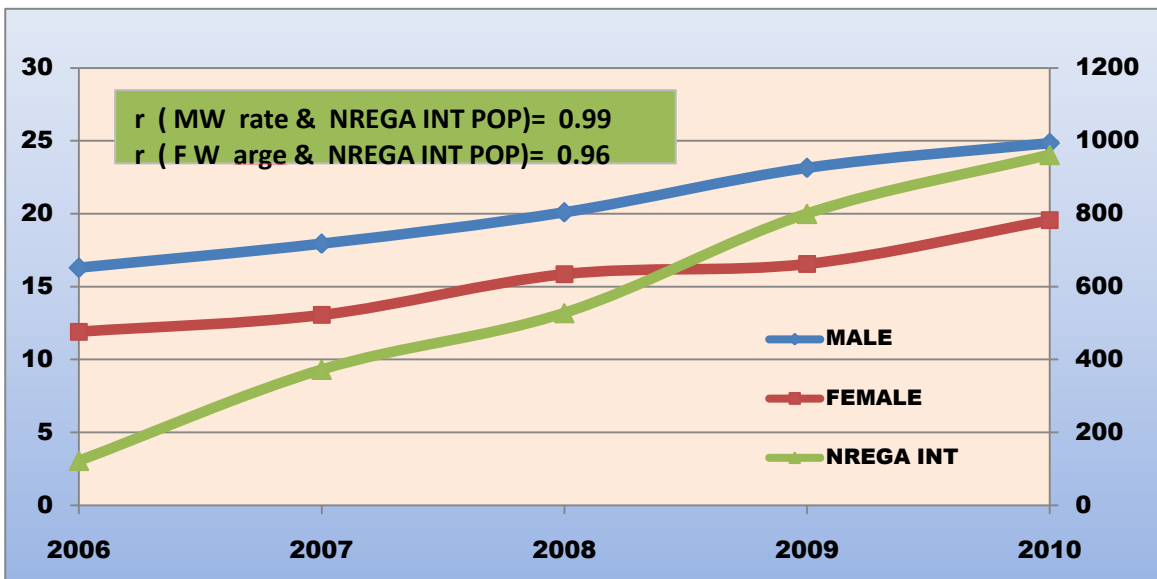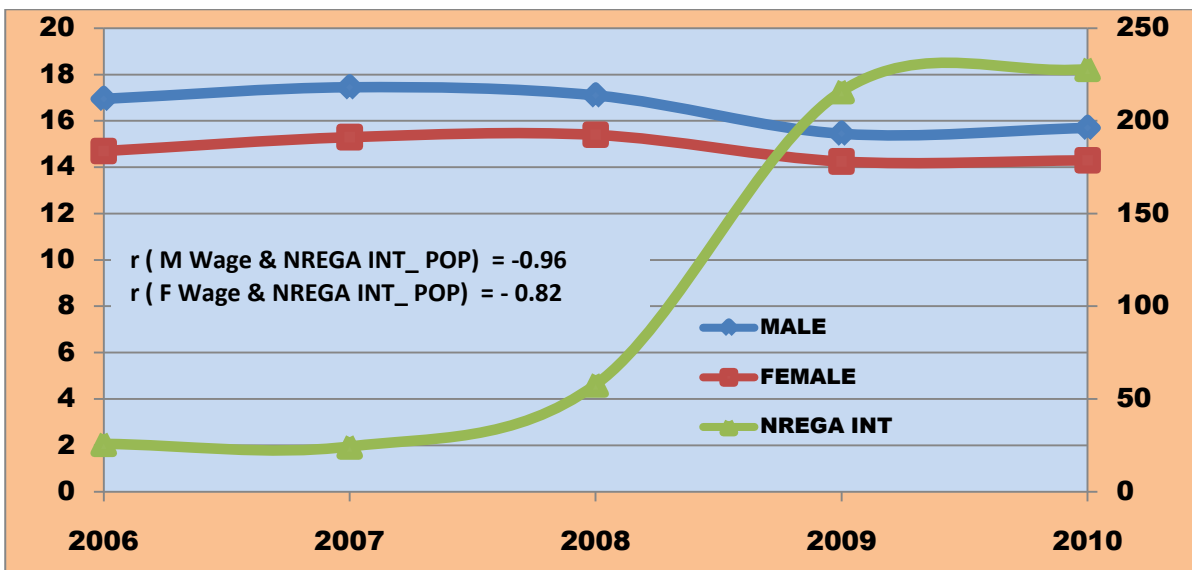
r (MW rate & NREGA INT POP)= 0.99
r (F W arge & NREGA INT POP)= 0.96

Figure 5 :Real Agricultural wage rates and MGNREGA intensity with Rural Population In Gujarat

r (M Wage & NREGA INT_ POP) = -0.96
r (F Wage & NREGA INT_ POP) = - 0.82

In the figures 4 and 5 the figures explain the correlation between the male and female real agricultural wage rates and the MGNREGA Intensity with rural population. On the primary axis we have the former and on the secondary axis we have the latter.In the figure 4 for Andhra Pradesh, we can see the three variables have high correlation when r=0.99 for M Wage rate and MGNREGA INT R_POP and r= 0.96 for F Wage Rate MGNREGA INT R_POP whereas in figure 5 for Gujarat, the variables have weak correlation when r= -0.96 for M Wage rate and MGNREGA INT R_POP and r= -0.82F Wage Rate MGNREGA INT R_POP .

Figure 6 :Comparision of skilled labour wage rates (mason) and MGNREGA Intensity with Rural Population for Andhra Pradesh and Gujarat
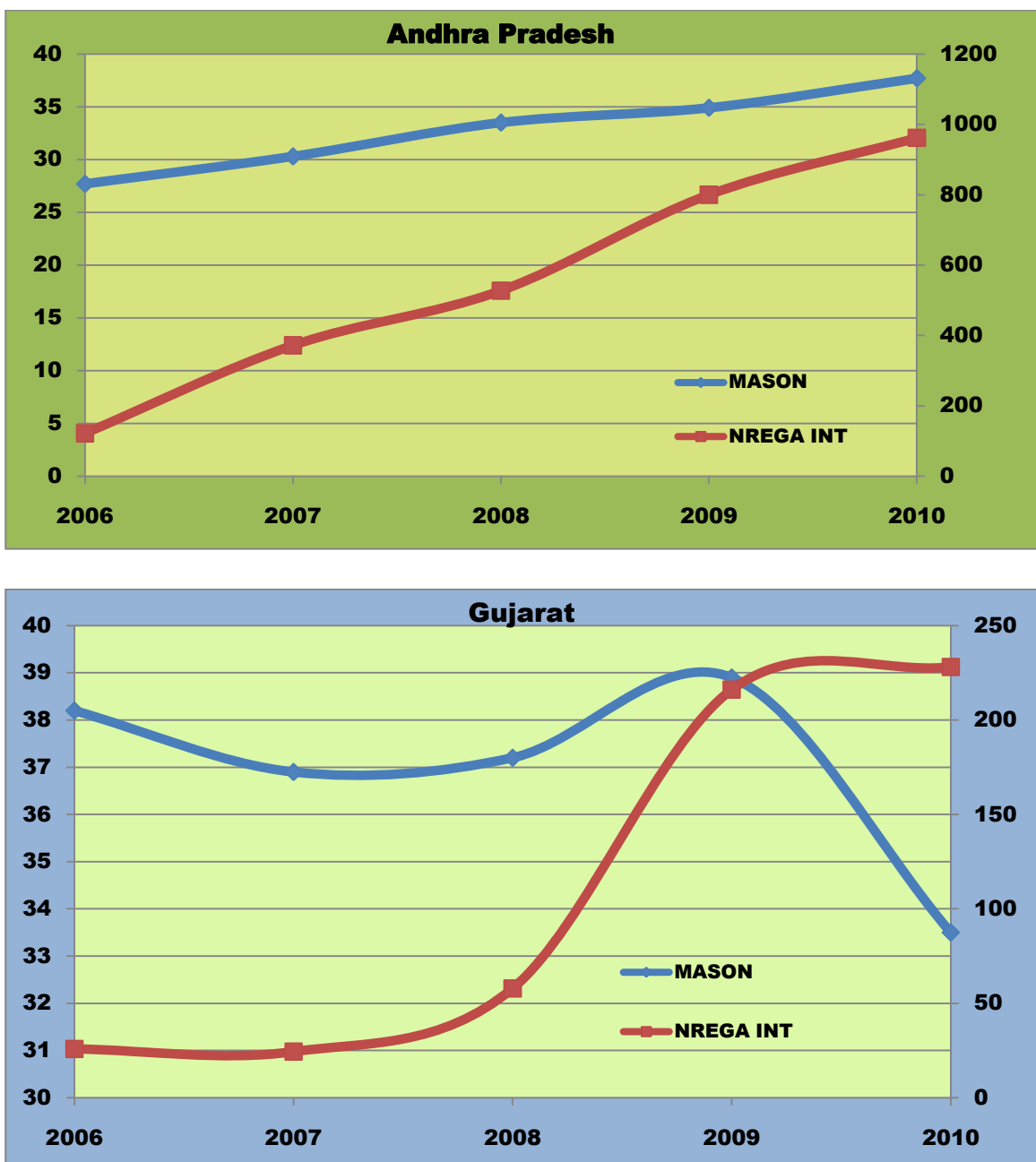
In the above two figures, we can see that in case of Andhra Pradesh the mason wage rate and NREGA intensity are rising but do not have any strong correlation between them and this maybe mason is skilled labour and MGNREGA impacts unkilled labour. Whereas in case of Gujarat, we can see a rising trend of the NREGA intensity after 2008 and the mason wage rate is clearly declining. Though there is growth but the lower status people might not be getting the benefits.

5.2.Regression Results

- Fixed effects panel Model was run
- Weighted least square reg. models (Generalized Least Square)
- Period : 4 (2007 to 2010);
- Cross section : 15 (States); Total obs. =59

Table no. 3 MODEL 1

Dep. variable (Y1) – Avg. Real ag. wagerate_male (Rs./day)

INDEPENDENT VARIABLES	COEFFICIENTS	T-STATISTICS	P value
CONSTANT	-29.45	-3.93	0.03
MGNREGA INT_RPOP	0.3	3.91	0.04
MGNREGA INT_NSA	-0.28	-4.35	0.01
LITERACY RATE	0.48	4.78	0.00
CROPPING INTENSITY	0.12	3.25	0.23
IRRIGATION INTENSITY	-0.02	-1.85	0.07
Adj R^2	0.97		
F stat	88.90		0.0000

Here in this model, our first independent variable i.e MGNREGA intensity with rural population is very much significant and we can say that when the MGNREGA intensity increases by re.1, then the male wage rate increases by 0.30p per day. But the wage rate has not increased where the MGNREGA funds are spent on the fields(net sown area) i.e our second MGNREGA related variable. Literacy Rate is significant and also showing expected sign. If the Literacy rates increase by 1 %, then the wage rate increases by 48p. Then the cropping intensity, if changes by 1 %, then the wage rates changes by 12p. The irrigation intensity shows negative sign and is not significant also. This shows that the wage rate has not increased much in the irrigated areas but

has increased in the dry land areas. Moreover , large parts of MGNREGA funds have been used in the poverty stricken areas and also the dry land areas. F-statistics reveals that the model is significant. R^2 explains that the five independent variables i.e X1 to X5 show 97% variation in the dependant variable Y1.

Table no. 4 MODEL 2

Dep. variable (Y2) – Avg. Real ag. wagerate_female (Rs./day)

INDEPENDENT VARIABLES	COEFFICIENTS	T-STATISTICS	P value
Constant	11.9	1.56	0.12
MGNREGAint_RPOP	0.27	0.29	0.77
MGNREGAint_nsa	0.62	6.13	0.001
Literacy rate	0.05	1.53	0.13
Cropping intensity	0.012	0.3	0.76
Irrigation intensity	-1.61	-2.48	0.01
Adj R^2	0.98		
F stat	188.64		0.00

This is the second model where Y2 is the female agricultural wage rate and we can see from the table the MGNREGA intensity with rural population is not significant but the second variable is highly significant. This reveals that there are different factors which are operating for both male and female wage rates. The significant variable also reflects that the wage rates in case of female have increased. The increase is clearly due to MGNREGA because no other variables are as significant as the MGNREGA intensity with Net Sown Area. A main reason behind this can be men are more mobile and they are diverging to the non-farm sector rapidly. Unlike men, women are going into or are either forced to go into farming. In a nutshell, the table reveals that for women only MGNREGA is working. It seems Female wage rates are more responsive. The cropping intensity is not significant whereas the irrigation intensity is significant but not showing the expected sign.

Table no .5 MODEL 3

Dep. variable (Y3) – Avg. Real ag. wagerate_female (Rs./day)

INDEPENDENT VARIABLES	COEFFICIENTS	T-STATISTICS	P value
CONSTANT	-149.28	-6.39	0.00
MGNREGA INT_RPOP	-0.92	-4.35	0.01
MGNREGA INT_NSA	0.042	0.74	0.45
LITERACY RATE	2.8	7.31	0.00
CROPPING INTENSITY	-0.46	-9.25	0.00
IRRIGATION INTENSITY	0.35	7.82	0.00
Adj R^2	0.80		
F stat	13.20		0.00

In the third model , where Y3 is the mason wage rate(skilled labour), MGNREGA intensity with rural population is significant but not showing the expected sign. Neither the MGNREGA intensity Net Sown Area is significant. So, this proves that MGNREGA has no impacts on skilled labouri.e mason. Whereas in the above two models with unskilled labour the results are significant and affect the wage rates as well,though the factors operating for male and femaleare different. When the literacy rates increases by 1% , the mason wage rates increases by 2.8rs per day.. Skilled labour needs education to some extent therefore this has a huge impact. It has no significance with cropping intensity. But the irrigation intensity shows that the mason wage rates have increased by 35p per day when the irrigation intensity grows at 1%. This shows that the non-farm sector is growing more in the irrigated areas.

5.3 .Dokur Findings

Table no. 6

Year	Male farm wage rate(rs. Per day	Female farm wage rate(rs. Per day	Paddy Price(at harvesting time) Rs/kg	No. of available agricultural labourers
2000	45	30	500	800
2005	60	40	570	700
2006	65	45	580	500

2007	65	45	645	400
2008	100	75	950	400
2009	120	90	1000	300
2010	150	115	1030	200
2011	180	120	1080	200
2012	200	130	1100	200

The data in the above table was collected in a FGD during my visit to dokur. Dokur is in the district of Mahabubnagar. It comes under the SAT region. Rain fed agriculture is the traditional source of livelihood in this village. The main reasons for low crop productivity are : Recurrent drought , Uneven Rainfall, water scarcity, poor soils, poor economic condition of the farmers. Due to these reasons majority of the households in Dokur are facing the issue of unemployment specially during the recurrent droughts. Therefore, MGNREGA works are very much successful here mainly bush cutting, jungle cutting, de-silting of tanks, channel works. During the visit I came across a lot of MGNREGA workers who were very much satisfied with this programme. According to my survey I witnessed nearly six households which had moved to non-farm sector from farm sector. Major reasons for the rise in farm wages due to MGNREGA in Dokur are as follows :

(a) The works under MGNREGA take less timing which attracts the labour class to a great extent.

(b) Whereas the farming sectors demands work from morning to evening which is quiet tiresome for the labor class if compared to the MGNREGA works.

(c) Lately, the competition between the farmers has also added to the rising labor cost.

(d) The wage structure has also undergone some radical changes like recently the wages are being given on the basis of area and type of work.

(e) Nearby villages are providing free transportation and also more wages to attract the labourers.

6. CONCLUSION AND IMPLICATIONS

Firstly, In India, real wage rate ofagricultural male and female has increased specially after 2004-5; however growth rate on wage varies across the states. As we have seen in the figures above the average wage rates have increased and too in the years when MGNREGA was already introduced. It would be wrong if I say that the growth rate for wages has increased in the same proportion for all the states, there is variation definitely. But we can surely say that MGNREGA is one of the major factors responsible for the rising farm wages.

Secondly,Our regression results show that the female wage rates are more responsive to the MGNREGA intensity than other factors commonly understood in the literature. This is a very interesting finding. We can infer that the MGNREGA is working more effectively for women then men. MGNREGA does provide women, both engaged in the labour market or working as housewives, an opportunity to earn (minimum) wages and incomes; to mobilize to develop collective strength (in the form of SHGs or in any other forms); and to participate in village level institutions like Gram Sabhas, Vigilance Committees, social audits etc.(Hirway,2008). MGNREGA by itself wont be able to remove the gender gap completely in the labour market neither can any one programme. These programmes can initiate the change and help in reducing the gap. To achieve the gender equality conducive micro as well macro picture has to be created.

Then the next point, the rate of growth on agricultural wages is more in the dry land areas than in the irrigated belt. In the first two models of unskilled labour we have seen that the results for irrigation intensity is not quite appealing. Large parts of MGNREGA funds might be favouring the dry land and the poverty areas more than the irrigated areas.

The factors influencing male and female wage rates vary so the marginal impacts of the factors in deciding the wage rate structures. The operating factors which influence the wage rate structure is different for both male and female in the sense that the male average wage rate is affected by the MGNREGA intensity with rural population and not affected by the MGNREGA intensity with Net Sown Area whereas the Female wage rate is affected by the latter and not by the former. The significance of other independent variables also differs with both these dependant variables.

As expected, the MGNREGA intensity is affecting more towards the variation of wage rates of unskilled labour wage than skilled labor (Mason). The study also analyses the impact of wage rates on the skilled and unskilled labour. The regression results show that MGNREGA plays a major role in the unskilled labour sector and MGNREGA is almost insignificant to the skilled labour sector. Moreover, the results of literacy rates and the irrigation intensity are quite significant. This is due to skilled labour requires some amount of primary education atleast and the growth of non-farm sector is more in irrigated areas.

REFRENCES

Amita Sharma, "Mahatama Gandhi National Rural Employment Guarantee Act, 2005A Rights based law for inclusive growth", joint secretary of Ministry of rural Development,GOI.

Ashok Gulati Nidhi Satija Surbhi Jain,(2013), "Rising Farm Wages in India The 'Pull' and 'Push' Factors". CACP(Discussion paper)Department of Agriculture & Cooperation Ministry of Agriculture Government of India.

Anshuman Jaswal,Paulomee Mistry(2007)," Will NREGA ensure food security? Summary Report Ahmedabad.

B.G. Harisha, N. Nagaraj*b, M.G. Chandrakantha, P.S. Srikanthmurthya P.G. Chengappac and G. Basavaraj(2011)," Impacts and Implications of MNREGA on Labour Supply and Income Generation for Agriculture in Central Dry Zone of Karnataka". *Agricultural Economics Research Review,* **Vol. 24 (Conference Number) 2011 pp 0-0**

Dreze, J., 'Breaking the Nexus of Corruption', in *The Battle for Employment Guarantee***, ed. R. Khera, New Delhi: Oxford University Press, 2011, pp. 241–50.**

Erlend Berg, Sambit Bhattacharyya, Rajasekhar Durgam, Manjula Ramachandra(2012),"Can Rural Public Works affect Agricultural Wages?", CSAE working Paper (Centre For the study of African Economics.May

Govind Kelkar,"Gender Pathways Out Of Poverty Rural Employment",Unifem, India

K.N. Nair, T.P. Sreedharan ,M. Anoopkumar, (2009), " A study on IMPACTS OF NREGA", Working paper, on three gram panchayats of "kasargod" district, Kerala, August.

Kanika Mahajan(2012),"Agricultural wages and NREGA: Exploring the myth", Published in "mint",Wall street journal.

Kim Bonner et al,(2012)," MGNREGA Implementation: A Cross-State Comparison", The Woodrow Wilson School's Graduate Policy Workshop. January.

Katharina Raabeaabe Et al(2010)," How to overcome the Governance Challenges Of implementing NREGA", IFPRI Discussion Paper 00963

Mukherjee, D and U.B Sinha(2011), "Understanding NREGA : A simple Theory and Some Facts", Working Paper No.196, Centre for Development Economics, Delhi School Of Economics.

Mehtabul Azam,(2012),"The Impact of Indian Job Guarantee Scheme", Discussion Paper No. 6548 ; World Bank, May.

Pranati Gogoi Hazarika,(2009) ,"Program (NREGP) in Assam State (India) – A Case Study Promoting Women Empowerment and Gender Equality through the Right To Decent Work: Implementation of National Rural Employment Guarantee". December

Prof.Pratik Modi, Prof.Ajay Dandekar, Prof. Vivek Bhandari,(2010), " Usefulness of asset creation", Paper by (IRMA TO GOVT OF SIKKIM) on assessment of usefulness and sustainability of assets created under NREGA in Sikkim.

Salimah Samji ,Yamini Aiyar(2009)," Transparency and Accountability in NREGA *A Case Study of Andhra Pradesh"* , Accountability Initiative Engaging Accountability : Working Paper Series. February.

Usami,Y.(2011), " A recent trends in wage rates in rural India", Review of agrarian studies, vol.1, No.1, January-june .

 V.D.Shah Manish Makwana(2011)," Impact Of Nrega On Wage Rates,Food Security And

Rural Urban Migration In Gujarat", Research Study No.141 Agro-Economic Research Centre.