



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

## **Economic Analysis of MGNREGA in the Drought-prone States of Karnataka, Rajasthan and Irrigation-dominated State of Andhra Pradesh**

**P.S. Srikantha Murthy<sup>a\*</sup> and S. Indumati<sup>b</sup>**

<sup>a</sup>Department of Agricultural Economics, University of Agricultural Sciences, Gandhi Krishi Vijnana Kendra, Bangalore-560065, Karnataka

<sup>b</sup>Davanagere University, Davanagere-577 002, Karnataka

### **Abstract**

Using macro level data on MGNREGA performance in drought-prone states of Karnataka and Rajasthan as well as in irrigation-dominated state of Andhra Pradesh, this study has revealed that the impact of MGNREGA wage on the economic scarcity of labour is relatively modest when compared with the impact of hike in non-farm wages. Even though the provision of food security through public distribution system has contributed to the economic scarcity of labour, the relative hike in non-farm wages is contributing to higher economic scarcity of labour rather than PDS and MGNREGA wages. The study has suggested subsidies for farm mechanization should be provided in order to sustain food and livelihood security in the drought-prone as well as irrigation-dominant states of India.

**Key words:** MGNREGA, Economic analysis, MGNREGA impact on labour supply, Economic scarcity of labour

**JEL classification:** I38; H53

### **Introduction**

Karnataka and Rajasthan are the two most drought-prone states of India. Karnataka has the second highest drought-prone area next to Rajasthan with arid and semi-arid climatic conditions. Agriculture provides employment to about 52 per cent people in which agricultural labourers account for 32 per cent of total labour force (NSSO, 2005-06). The growth rate of labour force at 2.5 per cent is higher than that of the employment at 2.3 per cent. Unemployment among agricultural labourers increased from 9.5 per cent in 1993-94 to 15.3 per cent in 2004-05. Considering this, the Government of India launched the National Rural Employment Guarantee Scheme in February, 2006; it was renamed as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in October

2009. This world's largest employment guarantee programme aims at enhancing livelihood security of households in rural areas by providing at least 100 days of guaranteed wage employment per year to every rural household whose adult members volunteer to do manual work, which is primarily for natural resource management offering gender neutral wages. In this programme, one-third of the beneficiaries should be women and it provides equal opportunities for SCs, STs and other weaker sections. The effect of MGNREGA on farmers in drought-prone areas is different from that in irrigated areas due to differential employment and wage rates.

Paradoxically, even with high rates of unemployment, farmers are experiencing economic scarcity of labour for all operations as the market wage rates are way above the farm wages, affecting the supply of farm labour. The effect of economic scarcity of labour is increasingly being felt more in the drought-

---

\* Author for correspondence,  
Email: pssrikanthamurthy@gmail.com

prone states than in the irrigation-dominated areas. Using macro level data from the unemployment insurance program of the Government of India provided by MGNREGA for the two drought-prone states of Karnataka and Rajasthan and irrigation-dominated state of Andhra Pradesh, this paper has analyzed the reasons for such an economic paradox providing implications for policy considering provisions of (a) employment to needy rural families, (b) gender neutral minimum wage, and (c) supplementary income to labourers without adversely affecting labour supply to agriculture.

The hypotheses of the study are: (a) MGNREGA programme has been successful in providing 100 days of employment per annum to rural families demanding employment, (b) implementation of MGNREGA programme is more efficient in Karnataka than in Rajasthan, providing opportunities to the weaker sections of the community in employment generated, and (c) MGNREGA programme causes economic scarcity of labour in agriculture.

### Study Area and Methodology

The data for the study pertain to the drought-prone states of Karnataka and Rajasthan and irrigation-dominated state of Andhra Pradesh, where MGNREGA implementation has been relatively more impressive. The conceptual frame work for the study which provides the methodological base is the 'Backward bending supply curve of labour' which is illustrated.

### Results and Discussion

#### Employment Generation Potential Outside MGNREGA

It has been found that only around 50 per cent of the households who had registered under MGNREGA, actually demanded employment. Such a modest proportion availing MGNREGA employment is due to favourable labour market outside MGNREGA and outside agriculture. Rural households have registered for MGNREGA employment for 'jobcards' with the perception that such a registration may provide benefits in future treating 'jobcard' akin to 'ration card'. Of the total number of households demanding employment, 92-97 per cent were provided employment in the drought-prone states of Karnataka and Rajasthan, while for irrigation-dominated state of Andhra Pradesh, it was reported to be 107 per cent. Thus, in Andhra Pradesh,

employment under MGNREGA is being offered even to those households who did not demand for it. Karnataka had to strive to accommodate all the households demanding employment. Despite the Central Government earmarking ₹ 40,100 crores in its 2010-11 annual budget for MGNREGA (<http://indiabudget.nic.in>, 10/08/2011) and a high unemployment rate of 8.3 per cent (<http://planningcommission.nic.in> 10/08/2011), only 6 per cent of the total households demanding employment completed 100 days of work, in both the drought-prone states. In Andhra Pradesh, job provision for 100 days or beyond was higher at 12 per cent. The number of person-days of employment provided per household was around 50, half of the guaranteed number of days of employment, in all the three states. Since more than 90 per cent of the households demanding employment were accommodated, but still a low percentage of households completing 100 days of work indicate that rural households were getting gainful employment outside MGNREGA. Thus, provision of '100 days of employment per household per annum' need not be treated as a compelling target to be achieved, since MGNREGA programme is essentially demand-driven (Table 1).

#### BPL and MGNREGA

A comparison of the proportion of families under BPL in the selected states, with the proportion of BPL families availing MGNREGA indicates that the drought-prone states of Karnataka and Rajasthan, respectively had 17.4 per cent and 13.7 per cent BPL families. However, in Karnataka 21.2 per cent of the total families registered in MGNREGA belonged to the BPL category. Thus, Karnataka has benefitted BPL households more than any other state. In Rajasthan, which is more drought-prone than Karnataka, only 6.5 per cent of the families registered under MGNREGA belonged to the BPL category. In Andhra Pradesh, being a better endowed irrigated state, virtually no BPL family registered and/or availed the MGNREGA benefit, due to prevalence of higher wages outside MGNREGA, in agriculture and non-agriculture sectors. It may be mentioned that MGNREGA does not discriminate between BPL and APL families and hence the employment facility can be availed by any rural household (Table 2) ([http://planningcommission.nic.in/plans/stateplan/sdr\\_orissa/sdr\\_orich8.pdf](http://planningcommission.nic.in/plans/stateplan/sdr_orissa/sdr_orich8.pdf)).

**Table 1. Employment sought and offered by MGNREGA in sample drought-prone and irrigated states of India: 2010-11**

Particulars	Karnataka	Rajasthan	Andhra Pradesh
Households registered under MGNREGA for employment (millions)	5.3	9.9	11.7
Proportion of households seeking (or demanding) MGNREGA employment	45.6	54.7	47.7
Proportion of households offered employment under MGNREGA	92.2	97.3	107.0
Employment provided in No. of persondays per household	49	47	49
Proportion of households availing 100 days of MGNREGA work	5.9	5.6	12.5

Source: <http://nrega.nic.in/MISreport.htm> (26/27-07-2011 & 02-08-2011)

**Table 2. BPL families employed under MGNREGA in selected states of Karnataka, Rajasthan and Andhra Pradesh: 2010-11**

Particulars	Karnataka	Rajasthan	Andhra Pradesh
No. of BPL families registered in MGNREGA (in millions)	1.1	0.7	0.0
Proportion of BPL families registered out of the total families registered in MGNREGA	21.2	6.5	0.0
Proportion of BPL families in the state	17.4	13.7	11.1

Source: <http://nrega.nic.in/MISreport.htm> (26/27-07-2011)

### Age Cohort in MGNREGA

The age cohort analysis of those registered under MGNREGA indicated that about 60 per cent of the persons employed under MGNREGA were below 40 years of age, 32-35 per cent were in the age group of 40-60 years and a modest 4-6 per cent of the workers were above the age of 60 years. This is a pointer to the fact that MGNREGA employed able-bodied persons more than the aged persons (Table 3).

### Season-wise Employment under MGNREGA Programme

About one-third of the annual demand for MGNREGA work was during *kharif* in Andhra

Pradesh and Rajasthan. In Karnataka and AP, more than 60 per cent of the demand for MGNREGA work was during *summer* season, while in Rajasthan it was around 50 per cent of the demand. In Karnataka, the annual demand for MGNREGA during *kharif*, the peak agricultural season of the state, was lowest, only nine per cent, followed by 29 per cent during *rabi* season and was maximum (62%) during *summer* season, which is a gainful employment during the off-season. Thus, this macro level data on season-wise employment under MGNREGA does not support the hypothesis that MGNREGA weans away labour force from agricultural activities and creates labour shortage (Table 4).

**Table 3. Age-wise details of employed persons under MGNREGA in selected states of Karnataka, Rajasthan and Andhra Pradesh: 2010-11**

Age group	(percentage)		
	Karnataka	Rajasthan	Andhra Pradesh
Below 40 years	61.2	61.9	60.6
40-60 years	35.6	32.3	35.7
Above 60 years	3.2	5.8	3.7
Total No. of employed persons (in millions)	6.1	7.3	11.2

Source: <http://nrega.nic.in/MISreport.htm> (26/27-07-2011)

**Table 4. Season-wise work demand pattern under MGNREGA in selected states: 2010-2011**

Season	Proportion of persons employed in MGNREGA as % of annual demand		
	Karnataka	Rajasthan	Andhra Pradesh
<i>Khariif</i> (June - Sept)	9.1	37.6	34.5
<i>Rabi</i> (Oct - Jan)	28.8	14.1	0.0
<i>Summer</i> (Feb - May)	62.1	48.3	65.5
Total annual demand for employment (in million persons)	11.1	20.0	20.8

Source: <http://nrega.nic.in/MISreport.htm> (26/27-07-2011)

**Table 5. Duration-wise employment provided under MGNREGA in selected states: 2010-2011**

Number of days work undertaken by families per year	Proportion of households attending to work (%)		
	Karnataka	Rajasthan	Andhra Pradesh
01 to 30 days	36.8	33.5	43.6
31 to 60 days	29.5	32.6	26.6
61 to 99 days	27.8	28.2	17.3
100 & more days	5.9	5.7	12.5
Total No. of households attending MGNREGA work	2.2	5.2	6.0

Source: <http://nrega.nic.in/MISreport.htm> (26/27-07-2011)

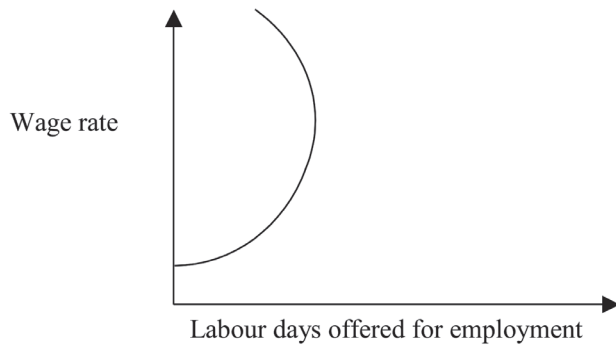
### Duration-wise Employment under MGNREGA Programme

The majority of households in Karnataka and Rajasthan (66% each) and Andhra Pradesh (70%) were provided employment for less than 60 days under the MGNREGA Programmes (Table 5). Only 6 per cent of the households each in Karnataka and Rajasthan and 12 per cent of the households in Andhra Pradesh got employment for 100 days. Since around 95 per cent of the households demanding MGNREGA work were provided employment (Table 1) and more than half of the annual demand for work was during *summer* in all the three selected states (Table 4), it may be concluded that MGNREGA programme offered supplementary employment during the off-season and obviously did not compete with the labour demand for local agricultural operations.

### Economic Scarcity of Agricultural Labour and MGNREGA Programme

A majority of the rural households possess BPL cards. The value of foodgrains received by a BPL family (Channaveer, 2011), is ₹ 3114/ annum. Due to the populist policies of the ruling government, rice and wheat are supplied to BPL families at the rate of ₹ 1 to

₹ 3 per kg and with a provision of around 20 kg of foodgrains per month. Due to this many men and women tend to be complacent since their food requirements of the entire month are met with wage income of one or two days. In addition, in the rural areas, due to offer of higher wages in the non-agricultural sector, there is a backward bending supply of labour (Appendix 1 and Figure 1) at two levels. At the first level, the backward bending supply is due to provision of foodgrains for BPL families. This provision of food is independent of inflation and provides the barest minimum food, offering food security to the rural families. At the second level, the backward bending supply of labour operates and around 60 person-days of labour in the family are seldom interested to offer their labour. This is the reason also that in MGNREGA, only 6 - 12 per cent of the households offered 100 days of their labour, while 65 - 70 per cent of the households offered around 60 days of their labour per year. A person who has offered 60 days of labour, and if he/she stops working beyond this threshold, there are no compelling reasons to disbelieve that the person follows the backward bending supply of labour. Another argument is that the village panchayats are not attracting MGNREGA employables. However, if the village panchayat has provided opportunities per family with 60 days of work, then the



**Figure 1. Backward bending supply of labour**

village panchayat is also capable of providing opportunities per family with 100 days of work.

If people in rural area are food secure, then their first and foremost need is met and they have every reason to avail leisure. With increasing farm mechanization and availability of custom hire services, agriculture is more mechanized now than earlier and hence food production is sustained at the national level.

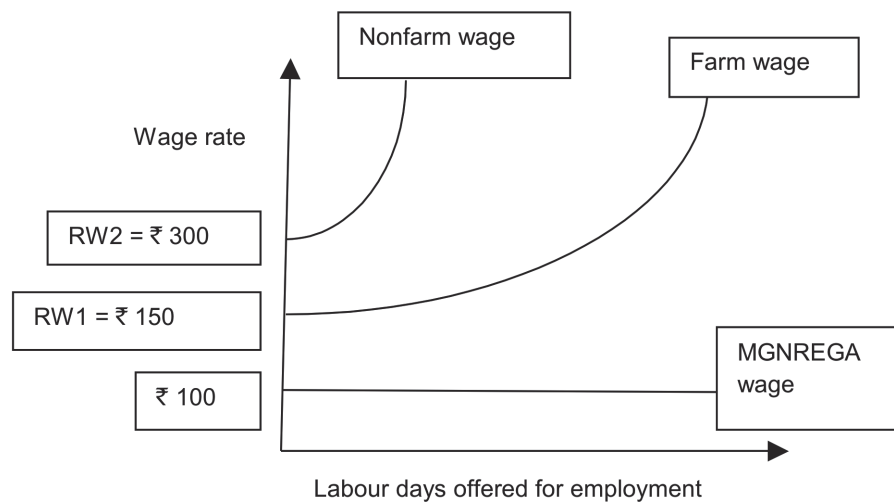
**Reservation Wage Argument**

The reservation wage counts the most in attracting the rural labour for work. Reservation wage is the threshold wage which makes a person to offer his/her labour. The MGNREGA wage was ₹ 100 per personday. The reason why rural people are not offering their labour is the level of their reservation wage (RW). Taking the case of Karnataka, the first level was RW1 where wage rate of ₹ 150 is offered in the rural areas and only a few would turn up at this rate. The rate of

increase in farm wage is also modest. The second level is RW2, where ₹ 300 is offered as non-farm wage and rural people get attracted to this higher reservation wage. The rate of increase in non-farm wage is also substantial compared to the farm wage. Thus, the reason for sub-optimal utilization of MGNREGA is the provision of food articles in the public distribution system which renders food availability and security for a month with only one or two persondays of labour. One of the reasons for suboptimal supply of labour for farm operations is the provision of relatively drudgery-free labour and wage in MGNREGA. The reason for seasonal migration and increase of labour employment in urban and peri-urban areas was the substantially higher reservation wage of 200 per cent in non-farm wage over MGNREGA wage and 100 per cent increase in non-farm wage over farm-wage. The hike in non-farm wage attracts substantial youth from the rural areas towards civil works in peri-urban and urban areas which pays these workers for a longer time horizon (Figure 2). Thus, there is economic scarcity of labour as the reservation wages as well as the rate of increase in wage with increase in employment increase at different exponential rates.

**Conclusions and Implications**

Using the macro level data on MGNREGA and arguments of economic scarcity of labour, this study has amply proved that MGNREGA programme is complementing the rural wage incomes of the needy at no cost to agriculture and other sectors in the rural areas. The economic scarcity of labour in agriculture



**Figure 2. Hike in non-farm wage level in rural areas**

is largely due to the higher hikes in non-farm wages offered especially by the mining and construction sectors in Karnataka and similar sectors in other states of India. The wage differential between rainfed and irrigated agriculture is relatively small compared with the wage differential between farm and non-farm wages. Hence, even in the irrigation-dominated state of Andhra Pradesh, the economic scarcity of labour is not due to MGNREGA wage, but due to hike in non-farm wages. The provision of food security through public distribution system as a populist measure reinforces the backward bending supply of labour already manifested due to the hike in non-farm wages.

The rural areas are almost becoming 'old age homes' due to hike in non-farm wages attracting rural youths for employment. Simultaneously, agriculture needs to be supported by subsidies for farm machinery in order to assist farmers who are facing the economic scarcity of labour. These policies are crucial for sustaining the food security as well as livelihood security of agricultural sector in the drought-prone as well as in irrigation-dominated states of India.

## References

- Abraham, Vinoj (2009) Employment growth in rural India: Distress-driven?. *Economic and Political Weekly*, **40** (16): 97-104.
- Channaveer (2011) Economic impact of developmental programs in peri-urban areas of Bangalore Metropolis, Karnataka, Unpublished *M.Sc. (Agri) Thesis*, Department of Agricultural Economics, University of Agricultural Sciences, Bangalore.
- NSSO (2005-06) *Survey Report on Employment and Unemployment Situation in India*, NSSO 62<sup>nd</sup> round, NSSO, New Delhi.
- Sugata, Manjit and Kar, Saibal (2009) A contemporary prospective on the informal labor market: Theory, policy and Indian experience. *Economic and Political Weekly*, **40** (14): 60-71.
- <http://nrega.nic.in/MISreport.htm> (26/27-07-2011)
- <http://www.google.co.in/search?client=firefox-a&rls=org.mozilla%3Aen-US> (22-08-11)
- <http://indiabudget.nic.in> (10/08/2011)
- <http://planningcommission.nic.in> (10/08/2011)
- [http://planningcommission.nic.in/plans/stateplan/sdr\\_orissa/sdr\\_orich8.pdf](http://planningcommission.nic.in/plans/stateplan/sdr_orissa/sdr_orich8.pdf)

**Appendix 1. Illustration of backward bending supply of labour in the study area**

Wage rate (₹/personday)	Labour supply in persondays
100	150
110	155
120	163
130	170
140	185
150	200
160	220
170	235
180	260
190	280
200	270
210	250
220	220
230	190
240	170
250	150
260	130
270	120
280	105
290	100
300	90