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## **Impact of Rural Development Scheme on Availability of Agricultural Labour — A Study of Dairy Farmers in Thanjavur District of Tamil Nadu**

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### **Abstract**

This study conducted in the Thanjavur district of Tamil Nadu, has indentified the problems being faced by dairy farmers due to scarcity of farm labour for agricultural and livestock production. The study is based on the data collected from 40 selected respondents involved in crop production and dairying in the study area during the year 2008-09 through primary survey. The study has revealed that the implementation of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has provided employment opportunities to rural workers and has checked the migration of farm labour from villages to cities and nearby industrial townships. All the eligible family member of landless dairy farmers had the job cards, but medium and large dairy farmers possessing agricultural land, prefer to work at their own farms. These farmers have reported that they were facing acute shortage of labourers during peak paddy planting and harvesting due to MGNREGS. The labour wages have increased significantly from Rs 60 to Rs110 per day since the implementation of MGNREG scheme. It has been observed that milch animals of some landless/ small dairy farmers are being maintained by the children or aged family members, as majority of adult family members prefer the MGNREGS jobs to earn wages. These adult members have complained about not getting 100-day wage employment as per provisions of scheme. The wage payments are also delayed after completion of work and they face problems in getting the job cards. The study has concluded that the minimum wages under MGNREGS should be increased cautiously keeping in view its impact on agricultural/ livestock activities.

**Key words:** MGNREGS, Agricultural labour, Labour demand, Labour wage rates, Rural – urban migration

**JEL Classification:** J22, J23, J38, J39

### **Introduction**

Livestock rearing along with crop production are considered the best insurance against the vagaries of nature due to droughts, famines and other natural calamities. It has excellent forward and backward linkages, which promotes many industries and increases the income of vulnerable groups, such as agricultural labourers, and small and marginal farmers. The livestock and allied sector contributed nearly 4.07 per cent to the GDP during 2008-09 and accounted for

29.7 per cent to the value of output from agricultural and allied activities (*Economic Survey*, 2010-11). The overall compound growth rate for livestock sector was steady, 6-7 per cent per annum during post-liberalization WTO era (1995-2010). This phenomenal growth has been achieved despite the fact that the investment in livestock sector was not substantial. The ownership of livestock is more evenly distributed across landless labourers, and small and marginal farmers owning bulk of milch animals in the rural India. It plays a crucial role in the socio-economic development of rural India through supplementary family income and gainful employment to the weaker section of the society and women.

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Rural India provides home to more than 60 per cent of the population. It is expected that nearly 30 per cent of the below poverty line (BPL) farm families depend on livestock for their existence income and employment in rural areas. Dairying is overwhelmingly a rural activity and is practised by millions of smallholders (< 2 ha of operational holding) as a part of mixed crop-livestock farming system. They comprise about 62 per cent of rural households and own 34 per cent of the arable land of the country. Among them holders of less than 1.0 ha of land (marginal household) are predominant comprising 48 per cent of the total rural households (Taneja and Birthal, 2005). These small and marginal farmers and landless labourers own 68 per cent of livestock in this country. An average Indian dairy herd is consisted of 1- 2 animals and annual milk yield per dairy animal is about 6 litres per day in crossbreds, which are popular among smallholders and landless farmers (Kurup, 2002).

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is a vital milestone and mechanism, the manifestations of which have led to the reviewing of crucial issues regarding the impact of development interventions in the rural ecosystems (Gupta, 2006; Jain, 2007; Sharan, 2009). It is expected that the synergy between rural employment guarantee programmes and farm activities may lead to better domestic livestock output, which would be vital in ensuring the food sufficiency. With the implementation of the MGNREG scheme since 2006 in different states, there have been lot of changes in demand and supply of agricultural labourers for livestock and other farms activities; daily labour wages have also increased as wages offered for job under MGNREG scheme are presumed as the benchmark in rural areas.

The Thanjavur district in Cauveri delta region is the most fertile region of Tamil Nadu. It contributes a major part of foodgrains mostly paddy to the state pool and is known as "Rice Bowl" of Tamil Nadu. The economy of the district is basically agrarian as nearly 70 per cent of the labour work force depends on agriculture and livestock for livelihood. The present study was undertaken with the objective of analysing the impact of MGNREG scheme on availability of labour for dairy and other farm operations in the Thanjavur district of Tamil Nadu.

## Data and Methodology

The Thanjavur district of Tamil Nadu was purposively selected for the study. It has 6.2 per cent of the state livestock population and other infrastructural support for production and marketing of dairy products. There are 8 sub-divisions and 14 development blocks in the district. The multi-stage stratified random sampling was used to select the Kumbakonam block and respondents for the study. A list of all 124 revenue villages in the Kumbakonam block was prepared and arranged in the alphabetic order. The villages were divided into two strata taking all the villages within 5 km radius from the block headquarters as the first stratum and the villages beyond 5 km radius as the second stratum. From each stratum two villages were selected randomly and from each selected village, 10 dairy farmers were randomly selected to draw sample of 40 respondents. The data pertaining to general family information, labour availability for livestock and farm operations, daily wages, milk production, marketed/ marketable surplus of milk, etc. were obtained during the year 2008-09. The simple tabular and frequency analysis was applied as analytical tools. The sample dairy farmers were asked to rank the labour problems faced by them due to implementation of MGNREGS and its impact on wage increase and work quality. To prioritize the dairy farmers' problems of labour availability associated with the implementation of MGNREGS in the study area, Garrett's Rank Based Quotients (RBQs) methodology was followed. The order of problems given by the selected dairy farmers was changed into ranks per cent proposition by using the relation. The mathematical notion used for estimation of RBQs was:

$$RBQ = \sum f_i (n+1-i) 100 / (N n)$$

where,

$f_i$  = Frequency of the  $i^{\text{th}}$  rank,

$n$  = Number of ranks,

$i$  = Rank position (1 to  $n$ ), and

$N$  = Number of dairy farmers selected as respondents.

## Results and Discussion

A comparison of demographic indicators of the Thanjavur district selected for the study and Tamil Nadu state has been presented in Table 1. It is evident from table 1 that as per Census of India 2011, Tamil Nadu

**Table1. Demographic indicators of Thanjavur district and Tamil Nadu state: 2001-2011**

Particulars/Indicator	District		State	
	2001	2011	2001	2011
Population census				
Total population (in lakhs)	22.16	24.03	624.06	721.39
Population density (per sq km)	652	707	480	555
Sex ratio (females per 1000 males)	1,021	1031	987	995
Rural population (%)	66.22	64.61	55.96	51.55
Urban population (%)	33.78	35.39	44.04	48.45
Male population (in lakhs)	10.96	11.83	314.01	361.59
Female population (in lakhs)	1,1.20	12.20	310.05	359.80
Rural population (in lakhs)	14.68	15.52	349.22	371.89
Urban population (in lakhs)	7.49	8.50	274.84	349.50
Overall literacy (%)	75.45	82.72	73.45	80.33
Male literacy (%)	84.67	89.06	82.42	86.81
Female literacy (%)	66.7	76.61	64.43	73.86
<b>Percentage of child population in total population (0-6 years)</b>				
Total	11.72	9.32	11.59	9.56
Rural	12.10	9.46	12.12	9.82
Urban	10.96	9.06	10.92	9.28

*Note:* Compiled from population census data of Tamil Nadu (2001-2011)

had a population of 72.1 million, in which Thanjavur district accounted for 3.33 per cent population. There was an increase of 15.6 per cent in the state population as compared to the population of 2001. It added to the supply of labour in the Thanjavur district and Tamil Nadu state. The percentage of children in the age group of 0-6 years in the total population has declined from 11.72 to 9.32 in the Thanjavur district during the past decade. The rural population has increased from 14.68 lakh to 15.52 lakh during 2001-11 in the Thanjavur district. The majority of rural population works as the farm labourers. It indicates that the supply of farm labour has increased in the study area during the past one decade. Therefore, it is essential to generate employment opportunities to check the migration of farm labour from rural/villages through implementation of programmes like MGNREGS in this area.

### **Relationship between Educational Level and MGNREGS Workers**

The number of MGNREGS jobcard holders was estimated as per educational level of sample dairy farmers and is presented in Table 2. It is evident from Table 2 that the majority (87.5%) of respondents were educated and had studied up to the primary/secondary

level. The majority of them were landless labourers and had dairy as the secondary occupation for their livelihood. They also supplemented their income by working as labourers on other farms.

The size of operational landholdings and number of MGNREGS workers, presented in Table 3, reveal that 50 per cent of the selected dairy farmers were resource-poor and landless. All adult family members of landless dairy farmers who were eligible to work in MGNREGS had jobcards. However, the medium and large dairy farmers had agricultural land and preferred to work at their own farms. These farmers reported that they were facing shortage of labourers, particularly during the peak period of paddy planting and harvesting due to implementation of MGNREGS. The labour wages had increased significantly, from ₹ 60 to ₹ 110 per day since the implementation of MGNREGS. During survey, it was observed that livestock of some of the landless/ small farmers were being maintained by the children or aged family members as the majority of adult family members preferred the jobs of MGNREGS to earn wages. The labourers complained that they were not getting employment for 100 days as per provisions of the scheme. The wage payments were also delayed after completion of the work and they faced some problems in getting the jobcards.

**Table 2. Educational level of respondents' family-head and MGNREGS workers in 2008-09**

Particulars	Dairy farmers	Total herd-size	Lactating animals	No. of jobcards
Illiterate	5 (12.5)	19 (9.9)	6 (7.8)	18 (18.4)
Primary level	11 (27.5)	67 (34.9)	26 (33.8)	43 (43.9)
Secondary	15 (37.5)	42 (21.8)	19 (24.6)	32 (32.6)
Sr. Secondary	4 (10.0)	36 (18.8)	14 (18.2)	5 (5.1)
Graduate	5 (12.5)	28 (14.6)	12 (15.6)	0 (0.0)
Total	40 (100.0)	192 (100.0)	77 (100.0)	98 (100.0)

Note: Figures in parentheses indicate the per cent of the total.

**Table 3. Landholding size and MGNREGS jobcard holders dairy farmers in Thanjavur district: 2008-09**

Landholding size	No. of farmers	No. of family members		MGNREGS jobcard holders		
		Adults	Children	Males	Females	Total
Land less	20 (50.0)	74	68	33	41	74 (100.0)
Small (< 1 ha)	6 (15.0)	16	21	7	8	15 (94.0)
Medium (1-2 ha)	9 (22.5)	22	29	5	4	9 (40.9)
Large (>2 ha)	5 (12.5)	14	19	0	0	0 (00.0)
Total	40 (100)	126	137	45	53	98 (77.8)

Note: Figure within the brackets show respective percentages

**Table 4. Distribution of livestock and landholdings of selected dairy farmers in Thanjavur district: 2008-09**

Landholding size	No. of farmers	Total herd-size				
		Desi	Cross-bred	Buffalo	Lactating	Total
Landless	20 (50.00)	7	16	4	27 (35.1)	64 (33.3)
Small (< 1 ha)	6 (15.00)	3	7	1	11 (14.3)	23 (12.0)
Medium (1-2 ha)	9 (22.50)	2	14	3	19 (24.6)	43 (22.4)
Large (>2 ha)	5 (12.50)	1	16	3	20 (26.0)	62 (32.3)
Total	40 (100.0)	13 (16.9)	53 (68.8)	11 (14.3)	77 (100.0)	192 (100.0)

The herd-size and operational landholding of the selected dairy farmers, presented in Table 4, reveal that out of 40 dairy farmers, 50 per cent were landless households. The cross-bred animals were adopted by all the categories of dairy farmers as 69 per cent of the lactating animals were cross-bred. It was observed that the 52.5 per cent of the respondents had dairy as their subsidiary occupation. They were landless or possessed a small piece of land and reared one or two animals. The majority of medium and large dairy farmers had also adopted dairy as subsidiary occupation with crop production as primary occupation. It was largely these farmers who required the services of farm labourers for different farm and livestock operations. They reported that the labourers demand wages as per provisions of MGNREGS and for some agricultural/

dairy operations, they even demand higher wages. The dairy farmers had to pay such exorbitant wages due to acute shortage of labourers during peak demand season.

The information about impact of MGNREGS, scarcity of farm labourers and related constraints provided by the respondents has been presented in Table 5. It was reported that the scarcity of farm labourers due implementation of MGNREGS had increased. It was referred as the key problem (RBQ value of 80.36), followed by its impact on labour wages which had increased substantially (RBQ 80.00). The respondents belonging to the landless group were happy with the implementation of MGNREGS and revealed that employment level in villages had improved drastically and migration from villages was checked; it was given

**Table 5. Problems of dairy farmers due to implementation of MGNREGS in Thanjavur district**

Problem/Constraint	Rank frequency							RBQ value	Overall rank
	I	II	III	IV	V	VI	VII		
Has scarcity of farm labour due to MGNGRES increased?	18	10	2	4	3	1	2	80.36	1
Has MGNREGS caused increase in labour wage during past 3-4 years?	7	18	9	4	2	0	0	80.00	2
Has MGNREGS impacted on working hours & quality of work on dairy farms?	2	2	5	10	9	4	8	47.86	4
Corruption in implementation of MGNREGS, issue of jobcards, work, etc.	0	3	2	3	8	15	10	37.14	7
Are wages paid regularly after work completion?	3	0	1	5	10	11	10	38.57	6
Satisfied with the nature of work and days employed	0	2	5	14	7	4	8	46.43	5
Has employment level improved in villages after implementation of MGNREGS?	9	6	15	3	2	3	2	71.43	3

3<sup>rd</sup> rank (RBQ 71.43). The delay in payment of wages to labourers after completion of work, and corruption in scheme implementation were ranked low, 6<sup>th</sup> and 7<sup>th</sup>, respectively by the respondents.

The respondents revealed that increase in labour wages had affected the prices of milk and milk-based products in the study area. They expressed the need for special arrangements for labour-wage payment working on dairy farms. The MGNREGS had caused an increase in wages and added to the problem of non-availability of farm workers in the study area. Due to payment of wages as per MGNREGS, the cost of production for paddy and other crops had gone up by 18-43 per cent within a year due higher labour cost only. It may also add to cost-plus inflation for dairy and other farm products. The results of the study reveal that the rate of food inflation had crossed the level of 20 per cent during year 2009. The contribution of milk and meat group was in the range of 12.3 to 15.8 per cent (Chand *et al.*, 2011).

## Conclusions

The population growth in the Thanjavur district during the first decade of 21<sup>st</sup> century has added to the supply of labour in the area but even then the implementation of MGNREGS has affected the availability of farm labour and increased the labour cost in the study area. The average labour wages for agricultural and dairy-related works have doubled during the past 3-4 years. The increase in labour wages has added to the average cost of cultivation for paddy, which has increased from ₹ 11000 to ₹ 14000 per acre

due to non-availability of labour for crop operations during peak demand due to the MGNREGS works. It has an adverse effect on the net profit of the dairy farmers through sale of milk and paddy cultivation. The study has indicated that MGNREGS has increased the employment opportunities for rural masses and has checked the migration towards cities or industrial townships. The respondents possessing large landholdings and big herd-sizes have pointed out that due to acute shortage of farm labour they have to delay the paddy planting which leads to a decrease in paddy productivity. The study has suggested that a proper work calendar should be followed for MGNREGA work. It should be undertaken during lean season to manage labour shortage for farm operations. The MGNREGS guarantees 100 days of wage employment but majority of landless labour households have complained that they get job hardly for 40-50 days during a year. The study has concluded that the minimum wage under MGNREGS should be increased cautiously keeping in view its impact on agricultural/livestock activities. It should be targeted at the welfare of poor and needy workers. The MGNREGS may not be a long-term solution to the unemployment problem of rural India.

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