



ABSTRACT

Mahatma Gandhi National Rural Employment Guarantee Scheme – Undertaking of Solid Waste Management activities for the year 2015-16 under Mahatma Gandhi National Rural Employment Guarantee Scheme – **Approval of** the Rural Schedule of Rates for Solid Waste Management activities for the year 2015-16 – Orders – Issued.

Rural Development and Panchayat Raj (CGS.1) Department

G.O. (Ms) No.87

Dated: 08.06.2015

Read:

- 1 G.O. (Ms) No.47, Rural Development and Panchayat Raj (CGS.1) Department, dated 26.3.2015.
2. G.O. (Ms) No.59, Rural Development and Panchayat Raj (CGS.1) Department, dated 15.4.2015.
- 3 Director of Rural Development and Panchayat Raj Letter No.80327/11/TU.2, dated 22.5.2015

ORDER:

In the Government Order first read above, the Government **has** issued guidelines for Planning and Implementation of Solid Waste Management **Systems** in Rural Areas.

2. In the Government Order second read above, the Government **has** enhanced the wage rate under Mahatma Gandhi National Rural Employment Guarantee Scheme for the unskilled manual workers in Tamil Nadu from Rs.167/- to Rs.183/- per person per day and issued Rural Schedule of Rates for the year 2015-16 and Rural Schedule of Rates for the year 2015-16 for Karuvel and all other types of plantation.

3. In the letter third read above, the Director of Rural Development and Panchayat Raj has stated that the present Rural Schedule of Rates does not cover the various activities involved in Solid Waste Management.

The provisions under Schedule I paras 7 and 8 of the Mahatma Gandhi National Rural Employment Guarantee Act 2005 stipulates that –

- (7) “when wages are directly linked with the quantity of work, the wages shall be paid according to schedule of rates fixed by the State Government for different type of works every year in consultation with State Council”

- (8) “The Schedule of rate of wages for unskilled labourers shall be so fixed that a person working for eight hours of work including one hour of rest would normally earn a wage equal to the wage rate.”

Hence, in order to ensure the above and for creating separate Rural Schedule of rates for the Solid Waste Management activities, it was proposed to carry out detailed Time and Motion studies. The Time and Motion studies will enable assessing the physical outturn generated and the rural schedule of rates can be fixed accordingly.

3.1. Time and Motion Study

Considering the importance of assessing and analysing the various processes involved in the work, detailed instructions were given to the districts to carry out a comprehensive Time **and** Motion study:

3.1.1. Sampling Districts

In order to ascertain the outturn of works in different zones the Time and Motion study was conducted in 6 different regions as given below:

Sl. No	Name of zone	Name of the districts
1	Northern Zone	Kancheepuram, Vellore, Villupuram
2	Central zone	Dindigul, Trichy, Perambalur
3	Southern zone	Sivagangai, Tirunelveli, Ramnad
4	Delta	Nagapattinam, Thanjavur , Karur
5	Western zone	Coimbatore, Namakkal, Salem
6	Hilly area	The Nilgiris

3.1.2. Types of Habitations selected

The Time and Motion study was conducted from 04.05.2015 to 09.05.2015 and 11.05.2015 to 16.05.2015. Three different types of habitations were selected in each district for carrying out the study:

- (a) Habitation with Dense population
- (b) Habitation with Medium population
- (c) Habitation with Sparse population

The districts were instructed to categorise the habitations based on the total population, **number** of streets, **number** of households per street, etc.,

3.1.3. Activities carried out

- a) Collection of wastes from households

- The maximum number of households that can be covered during 8 hours including 1 hour of rest and the quantity of garbage collected in MT or Kg was assessed for different combinations depending on the number of streets, proximity of houses, etc.,
- The building debris was not taken into account for calculating the weight of garbage collected

(b) Segregation of Waste

- The duration required for segregating the wastes collected and also the quantity of different types of waste generated was assessed in MT or Kg.
- The distance of the segregation point from the last point of collection and the total distance covered were recorded.
- The wastes were classified as **follows**:
 - Bio-degradable **wastes** such as kitchen waste, vegetables, food, cow dung/animal waste, agricultural, leaves, egg **shells** etc.,
 - Non-Biodegradable Recyclable **wastes** which have economic value of recovery such as plastic, paper, old cloth etc.,
 - Non-Biodegradable and Non-Recyclable **wastes** which do not have economic value of recovery such as tetra packs, carbon paper, thermocoal etc.,

(c) Activities like **sweeping of streets / lanes, cleaning of drains and cleaning of streets.**

- The number of streets, drains that can be covered in the duration of 8 hours including 1 hour of rest **was also** assessed for various widths of the streets and drains.

(d) Dumping of the wastes into the compost pits & composting

- The distance between the segregation point and the dumping site was recorded.
- The time taken for dumping the Bio-degradable wastes and the residual Non-Biodegradable wastes in separate pits was assessed.
- When the garbage attains a height of 150 mm, the application of cow dung slurry and spreading a very thin layer of soil over the garbage is necessary for composting. Hence, the time taken for applying cow dung slurry and spreading a very thin layer of soil over the garbage was also assessed in the Time **and** Motion study.

3.1.4. Engaging Labourers

A set of two people was involved in the Time **and** Motion study, with one tri-cycle. The combination of the workers was as follows:

S.No	Male	Female	Age
1	2	0	As per MGNREGS Norms
2	1	1	
3	0	2	

- The Layout sketch of the habitation was prepared with details of Houses, roads, length of roads, Location of Collection points, Segregation points, dumping points, etc., before the conduct of Time **and** Motion study
- The overseer of that respective habitation was the officer in-charge, with the supervision of AE once a day, and AEE once in two days.
- All the activities indicated above were conducted for all the 3 **categories of** habitations simultaneously during the study period.
- The combination of activities was conducted for 3 days as given below for the duration of 8 hours including 1 hour of rest
 - Collection, street sweeping, segregation and dumping done on the same day
 - Collection, segregation and dumping done on the same day
 - Collection and segregation done on the same day
 - Collection, street sweeping and segregation done on the same day
- Complete Documentation of the entire exercise was done.

3.2.Observations based on Time and Motion Studies

3.2.1. Categorisation of Habitations/Streets

The habitations can be categorised into two types based on the population and **the number** of households per **street densely** populated or sparsely populated. There is no much variation in the data collected under the category of **habitations with medium population** and dense **population**. Hence only two categories viz. Densely populated **and** Sparsely populated may be finalised.

The habitations/streets which are categorized as densely or sparsely should be identified for each Village Panchayat before the start of Solid Waste Management activities.

3.2.2. Factors for consideration

- i. The factors considered in the collection of waste include
 - a. **Number** of households covered
 - b. Time taken to cover the households

- c. Quantum of waste generated or collected
 - d. The distance covered during the collection process. The **number** of households and distance is dependent on the type of habitation and which have a direct bearing on the time taken and distance to be covered.
- ii. In the case of densely populated habitation, there are more **number** of households in a short distance and the quantum of waste collected is also higher. On the other hand, in sparsely populated habitation, the houses **are** distributed across large geographical area **wherein** the duration **of coverage** is higher, whereas the **number** of households covered is less and the quantum of waste collected is also relatively less.
 - iii. It has also been observed in some cases that even though the same number of households are covered every day, the quantum of waste generated varies widely between each day. This is due to the fact that the quantum of waste generated per day is not constant. Thus, a range of waste collected in terms of **kilograms** has to be finalised for arriving **at** the Schedule of **Rates**.
 - iv. The outturn of work in street sweeping and cleaning of drains could not be assessed due to the fact that the local conditions vary widely and **that** no clear parameters could be fixed for the above item. Hence, **these items of work** need not be taken up under Mahatma Gandhi National Rural Employment Guarantee Scheme.
 - v. Segregation cannot be fixed as a separate activity because there is no scope to execute it as a fulltime activity for 7 hours. Moreover, the segregation work will be done only in the afternoon after the collected wastes are deposited in the segregation site. Likewise, dumping the waste into the compost pit also cannot be fixed as a separate activity for the same reasons stated above. Thus, the rates fixed **shall include** collection, segregation and dumping of the waste.
 - vi. The distance between the end point of collection and segregation point is also taken as a criteria. Thus, from the Time and Motion studies it is observed that it is possible for the workers to reach the segregation point conveniently if the distance from the end point of collection to the segregation is within 500m. Hence, the rates fixed shall also include conveying the waste to the segregation point at a distance of not more than 500m from the last collection point. When the segregation site is beyond 500m, the workers find it difficult to execute collection, segregation and dumping activities within the stipulated time. Hence, special provision shall be made for the conveyance for the site beyond 500m. In case, if the distance of segregation point is more than 500m but less than 2.00 Km then the worker shall be made eligible for travel allowance of 10% of the wage rate. However, the selection of the segregation point should be beyond 500m only in exceptional cases with proper justification. This extra 10% allowance **shall** be paid as a part of wage component.
 - vii. Likewise, in certain exceptional cases, the distance between segregation point and the compost pit exceeds 500m and in such cases also it is

difficult for the worker to convey the segregated waste to the dumping bin/ compost pit. In such cases also the extra provision of 10% may be allowed.

- viii. Time and Motion Study indicates that in case of hilly regions, separate rates shall be adopted considering the geographical terrain and the settlement pattern. Considering the slopy track of hilly area, the distance for the extra allowance in hilly area may be provided for the distance beyond 250m and upto 1km.
- ix. The outturn of a Mahatma Gandhi National Rural Employment Guarantee Scheme worker being dependent on the variables indicated above, it is necessary to fix the rates as a factor of these variables.
- x. The average outturn for the collection, segregation and dumping of wastes for the combination of 2 workers is as given below:

Sl.No	Item of activity	Average outturn obtained through Time and Motion Study (2 Workers)	Average outturn for 1 worker
1	Collection of Waste		
	(i) No. of Households covered by two MGNREG workers	150	75
	(ii) Quantum of waste collected	80 -100 kg	40 –50 kg
	(iii) Duration	4-5 hours	4-5 hours
	(iv) Distance covered	0.5 – 1 km	0.5 – 1 Km
2	Segregation of Waste		
	(i) Distance between the last point of Collection and the segregation point	500m	500m
	(ii) Quantum of waste segregated	80 – 100 kg	40 – 50 kg
	(iii) Time taken for segregation	1-2 hours	1-2 hours
3	Dumping of waste		
	(i) Quantum of waste Dumped	65 – 80 kg	33 – 40 kg
	(ii) Time taken	30 min – 1 hour	30 min – 1 hour

4. It was inferred from the Time and Motion study that the districts have categorized the habitations as densely or sparsely based on the total population and the proximity of houses i.e. Average number of houses/streets. Mostly, the districts have categorized the habitations as sparsely populated when the average number of houses per street is less than 50 and densely populated when it is more than 50. However, since there is wide variation in settlement pattern of habitations, each habitation / cluster of habitations in a village panchayat may be categorized as densely / sparsely populated taking into consideration the total population, number of households, number of streets and the average number of houses / streets. The categorisation of habitation as densely or sparsely populated has to be done for each and every habitation of a village panchayat identified for solid waste

management and should be indicated before the commencement of Solid Waste Management activities.

5. In the light of above **inferences**, the Director of Rural Development and Panchayat Raj has requested the Government to approve the Rural Schedule of Rates for Solid Waste Management activities for the year 2015-16 based on the Time **and** Motion study conducted.

6. The Government, after careful examination of the proposal of Director of Rural Development and Panchayat Raj, accord permission to undertake Solid Waste Management activities for the year 2015-16 under Mahatma Gandhi National Rural Employment Guarantee Scheme and approve the Rural Schedule of Rates for Solid Waste Management activities for the year 2015-16 annexed to this order and the **Director of Rural Development and Panchayat Raj is permitted to give detailed instructions to the concerned officials on finalizing the densely / sparsely populated habitations.**

7. This order issues with the concurrence of Finance Department vide its U.O. No.121/JS(AR)/2015, dated 02.06. 2015.

(BY ORDER OF THE GOVERNOR)

GAGANDEEP SINGH BEDI
SECRETARY TO GOVERNMENT

To

The Director of Rural Development and Panchayat Raj, Chennai – 15.

All District Collectors (except Chennai)

(thro' Director of Rural Development and Panchayat Raj, Chennai -15)

All Project Directors, District Rural Development Agencies, (except Chennai)

(thro' Director of Rural Development and Panchayat Raj, Chennai -15)

Copy to:

The Secretary,

Ministry of Rural Development, Government of India,

Krishi Bhavan, New Delhi – 110 114.

The Senior Personal Assistant to Hon'ble Minister (Municipal Administration, Rural Development, Law, Courts and Prisons), Chennai – 9.

The Senior Private Secretary to Secretary to Government,

Rural Development and Panchayat Raj Department Department, Chennai – 9.

Rural Development and Panchayat Raj (OP.2) Department, Chennai – 9

National Informatics Centre, Chennai – 9.

The Accountant General, Chennai – 18.

Finance (RD) Department, Chennai – 9.

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Annexure

(G.O (Ms) No.87, Rural Development and Panchayat Raj (CGS.1)
Department, dated 08.06.2015)

MGNREGS – Rural Schedule of Rates for the year 2015-16 for Solid Waste
Management

a) Plain Areas

Collection of waste from households including segregation of collected waste (within a distance of 500m between last collection point and segregation point) and dumping of the waste into compost pit and composting (within a distance of 500m between the segregation point and the dumping point) including activities such as clearing and collecting the wastes from the streets traversed during the household collection.

<u>Category I : Densely populated</u>	
a) Number of households = 75 Households	Rs.183/- per day per person (Collection, segregation & dumping the waste collected on the same day)
(and)	
b) Quantity of waste collected = 40kg	

<u>Category II : Sparsely populated</u>	
a) Number of households = 50 Households	Rs.183/- per day per person (Collection, segregation & dumping the waste collected on the same day)
(and)	
b) Quantity of waste collected= 30kg	

Note:

For distance traversed beyond 500m and upto 2Km between the last collection point and segregation point	Rs.18.30/- per day per person (Additional)
For distance traversed beyond 500m and upto 2Km between segregation point and Compost pit	Rs.18.30/- per day per person (Additional)

(b) Hilly Areas

Collection of waste from households including segregation of collected waste (within a distance of 250m between last collection point and segregation point) and dumping of the waste into compost pit and composting (within a distance of 250m between the segregation point and the dumping point) including activities such as clearing and collecting the wastes from the streets traversed during the household collection.

<u>Category I : Densely populated</u>	
a) Number of households = 50 Households	Rs.183/- per day per person (Collection, segregation & dumping the waste collected on the same day)
(and)	
b) Quantity of waste collected = 30kg	

<u>Category II : Sparsely populated</u>	
a) Number of households = 30 Households	Rs.183/- per day per person (Collection, segregation & dumping the waste collected on the same day)
(and)	
b) Quantity of waste collected = 20kg	

Note:

For distance traversed beyond 250m and upto 1 Km between the last collection point and segregation point	Rs.18.30/- per day per person (Additional)
For distance traversed beyond 250m and upto 1 Km between segregation point and Compost pit	Rs.18.30/- per day per person (Additional)

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