

Evaluation of Solid Waste Management Practices Followed by Local Governing Bodies of Rural Goa

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1.0 Introduction

The Municipal Solid Waste management sector is evolving rapidly with new principles of sustainability and technological advancements. The Government of India's flagship scheme Swachh Bharat Mission launched on October 2, 2014 has brought Municipal Solid Waste Management to the forefront of governance. It is an accepted fact that the increasing pace of urbanization in India, along with economic growth and improved living standards has added pressure to already strained capacities of Rural Local Governing Bodies to manage the increasing quantities of municipal waste generated daily. One of the major fallouts of this growth has been the challenge of scientific management of the Municipal Solid Waste generated in rural areas of India. To achieve the cleanliness targets in a time-bound manner and with utmost efficiency, all stakeholders must have general awareness of the physical characteristics of waste, basic principles of waste management, modern waste management technologies and best practices of the waste management sector.

As per the Constitution of India, Solid Waste Management is a state subject and it is the primary responsibility of state governments to ensure that appropriate solid waste management practices are introduced in all the cities and towns in the state. The role of Government of India is broadly to formulate policy guidelines and provide technical assistance to the states/cities whenever needed. It also assists the state governments and local bodies in human resource development and acts as an intermediary in mobilizing external assistance for implementation of solid waste management projects. In view of the above, this study was carried out to evaluate the existing solid waste management practices followed by rural local governing bodies of North Goa.

2.0 Research Methodology

The study was conducted in North Goa. North Goa District has 6 Blocks/Taluka out of which 2 Block/Taluka i.e. Bicholim and Sattari were selected based on number of villages in the taluka and according to rural setup. In the present study a descriptive research design was used. Universe consists of 1833 households and 14 wards in total. 10% household were selected from each village panchayat. That is total 183 household as respondents were the part of study at every stage with Stratified Random Sampling method. There are 7 wards in each village total of 14 wards were surveyed. Selection was done as per the proportion of households in each ward on the basis of random sampling method. The total sample size for this study was 150. In this study, all the data generation was done by using standard procedures. Data collection was carried out by using structured interview schedules (research instruments) and by following survey method. Reliability of the interview schedules was determined using a test-retest method. The reliability of the interview schedules was assessed prior to its use for data collection. Analysis of data was done with the help of various statistical tests. The descriptive statistics, such as frequency, percentage, minimum and maximum, etc. were determined from the collected data. All statistical analysis of the data is done with the help of Statistical Package for Social Sciences (SPSS) 24.0 Software.

3.0 Statistical Analysis & Interpretation

3.1 Solid waste collection

Table 1: Opinion of the respondents about Solid Waste Collection

Solid Waste Collection	Nos.	Per
Good	21	14.0
Fair	86	57.3
Poor	43	28.7
Total	150	100.0

Above **Table 1** shows opinion of the villagers of study area about the solid waste collection in their village. 14.0% respondents indicated that solid waste collection practices of local governing bodies are good while according to 57.3% respondents these practices are fair. Furthermore 28.7% respondents indicated that solid waste collection practices followed in their village is poor.

3.2 Solid Waste Transport

Table 2: Opinion of the respondents about Solid Waste Transport

Solid Waste Transport	Nos.	Per
Good	29	19.3
Fair	52	34.7
Poor	69	46.0
Total	150	100.0

Above **Table 2** shows opinion of the villagers of study area about the solid waste transportation in their village. 19.3% respondents indicated that solid waste transportation practices of local governing bodies are good while according to 34.7% respondents these practices are fair. Furthermore 46.0% respondents indicated that solid waste transportation practices followed in their village is poor.

3.3 Solid Waste Treatment/Processing

Table 3: Opinion of the respondents about Solid Waste Treatment/Processing

Treatment/Processing	Nos.	Per
Mechanized	19	12.7
Manual	79	52.7
Mix (Mechanized/Manual)	52	34.7
Total	150	100.0

Above **Table 3** shows opinion of the villagers of study area about the solid waste treatment/processing in their village. 12.7% respondents indicated that mechanized solid waste treatment/processing is done by local governing bodies while according to 52.7% respondents solid waste treatment/processing is done manually. Furthermore 34.7% respondents indicated that solid waste treatment/processing is done by following mix method (mechanized/manually).

3.4 Solid Waste Disposal Method

Table 4: Opinion of the respondents about Solid Waste Disposal Method

SW Disposal Method	Nos.	Per
Scientific	15	10.0
Mixed	103	68.7
Non scientific	32	21.3
Total	150	100.0

Above **Table 4** shows opinion of the villagers of study area about the solid waste disposal method followed in their village. 10.0% respondents indicated that scientific solid waste disposal method is followed by local governing bodies while according to 68.7% respondents mixed waste disposal method is followed. Furthermore 21.3% respondents indicated that non-scientific solid waste disposal method is followed.

3.5 Satisfaction with Present Solid Waste Disposal Mechanism

Table 5: Level of Satisfaction of the respondents with Present Solid Waste Disposal Mechanism

Level of Satisfaction	Nos.	Per
High	8	5.3
Moderate	93	62.0
Low	49	32.7
Total	150	100.0

Above **Table 5** shows level of satisfaction of the villagers of study area about the solid waste disposal mechanism followed in their village. 5.3% respondents are highly satisfied with the present solid waste disposal mechanism followed by local governing bodies while 62.0% respondents are moderately satisfied with it. Furthermore 32.7% respondents are less satisfied with the present solid waste disposal mechanism of their village.

4.0 Conclusions

4.1 Solid waste collection

- On the basis of the study results it is evident that solid waste collection practices followed by local governing bodies in study area (rural Goa) area are fair.

4.2 Solid Waste Transport

- On the basis of the study results it is evident that solid waste transportation practices followed by local governing bodies in study area (rural Goa) area are poor.

4.3 Solid Waste Treatment/Processing

- On the basis of the study results it is evident that solid waste treatment/processing is done manually by local governing bodies in study area (rural Goa).

4.4 Solid Waste Disposal Method

- On the basis of the study results it is evident that mixed waste disposal method is followed by local governing bodies in study area (rural Goa).

4.5 Satisfaction with Present Solid Waste Disposal Mechanism

- On the basis of the study results it is evident that most of the villagers of study area (rural Goa) are moderately satisfied with the present solid waste disposal mechanism followed by local governing bodies.

5.0 References

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