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‘WHERE GOES THE WASTE?’ A KNOWLEDGE, ATTITUDE, AND PRACTICE (KAP) STUDY ON DISPOSAL OF HOUSEHOLD WASTE

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Abstract: In India, the exponential growth of population and the consequently growing number of residences have aggravated the problem of household waste. Like many other towns of India, Mariani, a small town located in the Jorhat district of Assam also faces serious problems in terms of household waste disposal. The households of Mariani generate and discharge a huge amount of untreated waste daily. In this study, an attempt has been made to analyze the scenario of household waste disposal in Mariani town by means of a KAP survey. Interview and personal observation were used to collect the data. The data so collected is tabulated and processed to supplement the analysis through them. The findings of the study indicate towards many positive aspects along with the negative ones. The positive aspects are mostly related to the awareness and efforts made by the residents, whereas the negative aspects are mostly related to the improper methods of waste disposal adopted by the people and the existing scenario of the disposed waste. However, the study indicates that if taken care of in a concerted manner, the problem of household waste disposal in Mariani Town can be tackled.

Keywords: KAP survey; Household waste; Waste disposal

I INTRODUCTION

Solid waste lying scattered beside the roads, dustbins, and on the ground are not rare sights in India. Though such wastes contain a mixture of refuse from various sources like households, hospitals, factories, and shops, a major portion of it is comprised of waste generated at the household level. Household waste comprises those unwanted items that arise in a domestic dwelling: discarded products such as furniture, clothing or toys, used packaging, food leftovers, garden waste, the by-products of DIY and so on [1]. In simple terms, it can be defined as waste generated from day to day household activities. Each urban resident generates 350-1000 g solid waste per day [2]. With the growth of population and the consequently growing number of residences, the problem of household waste in India has aggravated. Managing this waste is a herculean task requiring a combination of the methods of source reduction, recycling, incineration and burying in landfills, and conversion. However, in spite of the strong emphasis laid by the government on waste management, these practices are not being properly adopted in many places, mainly due to the wrong perceptions and slackness of the people towards the issue.

The same problem is rampant in Mariani, a small town located in the north-eastern part of India, in the Jorhat district of the state of Assam. Mariani, a cosmopolitan area with a variety of social groups with different economic structures faces serious problems of household waste disposal. In Mariani, it is seen that waste generated from cooking and human activities are disposed of in roadsides. Very often these wastes are set on fire too. The improper handling and management of Household Waste are causing the adverse effect on the public at large and this is leading to gradual deterioration of the environment of the region.

II IMPORTANCE OF THE PROBLEM

In the wake of the growing waste problem in India and the need for proper waste disposal, the problem assumes great significance. It is more so in the case of the smaller towns, as many of the policies undertaken at a larger level fail to get implemented in such towns. It is the local attitude and daily life practices of the residents that mostly determine the scenario of waste disposal in such towns.

III SIGNIFICANCE OF THE STUDY

The present study holds tremendous significance as it attempts to understand the general outlook and practices of

the locals in terms of the disposal of household waste in the town of Mariani. It is thus, expected to serve as groundwork towards the formulation of local policies for managing the crisis of waste not only in this particular town but also in other such smaller towns.

IV OBJECTIVES

The main objective of the study is to ascertain the status of household waste disposal in Mariani Town. In order to fulfill this objective, the paper seeks to:

- Identify and describe the general practices of household waste disposal in Mariani town;
- Ascertain the attitudes of the residents towards household waste management in the study area;
- Comprehend the positive and negative aspects of household waste disposal in the study area; and
- Suggest measures for the betterment of the prevailing scenario of household waste disposal in the study area.

V DATABASE AND METHODOLOGY

The study is mainly based on primary data that is collected by means of a KAP survey, i.e. ‘Knowledge, Attitude and Practice’ survey. This method of survey involves the quantitative study of a specific population. This method, aims to collect information on a problem based on what people know (i.e. knowledge), how they feel (i.e. attitude), and how they behave (i.e. practice) in relation to a particular issue.

The collection of data in this study is carried out using questionnaires containing a set of predefined questions. For this study, altogether 100 respondents were approached irrespective of their sexes through a simple random sampling method and then the data have been collected through a face-to-face contact with the respondent.

Depending on the need, a few secondary data sources like books, journals and government reports also have been consulted. The collected data have been tabulated and processed using MS Excel to draw generalizations on the problem.

VI STUDY AREA

The town of Mariani is situated in the district of Jorhat at a distance of 17.5 km from the Jorhat town. It is located at 26° 40' N and 94° 19' E. Being situated in the foot hill of the Naga Hills, it has a topography gently sloping down from southwest to northwest. The town has an average elevation of 155 meters above sea level and its main drainage is the river Bhogdoi (Fig 1).

As per 2011 census, the total population of Mariani is 20,801 of which 51.8 percent are males and 48.2 percent are females [3]. The total number of households in the house is 4684 [3]. The total area of Mariani town is 3.60 sq.km.



Figure 1: Map Showing Location of Mariani Town

VII DISCUSSIONS AND RESULTS

This section is presented in three parts. In the first part the knowledge of the residents on household waste management are discussed, followed by a discussion on their attitude towards household waste and its management, and finally the prevalent practices of household waste disposal in the study area are discussed.

Knowledge on household waste management

To gauge the knowledge of the residents of Mariani town on household waste management, the respondents were enquired on the necessity of disposing waste properly, the impact of unplanned waste disposal on the environment and the impact of polythene on the environment.

When asked if it is important to dispose of household waste properly, 93 percent of the residents registered their positive response. However, 7 percent residents felt that proper waste disposal is not necessary. The prevailing scenario was further analyzed based on educational background and occupational background.

Educational background wise it was seen that all the 12th pass, graduates, and post-graduates of the town feel the need for proper disposal of waste, but the people who are less educated show varied opinion (TABLE I).

When compared on the basis of occupational background, no significant variations were seen (TABLE II).

Table I Educational Background Wise Take On The Necessity Of Proper Waste Disposal

| Educational Background | Types of Response | |
|------------------------|-------------------|-------------------|
| | Necessary (%) | Not Necessary (%) |
| Below 10th | 89 | 11 |
| 10th Pass | 98 | 2 |
| 12th Pass | 100 | 0 |
| Graduate | 100 | 0 |
| Post-Graduate | 100 | 0 |

Source: Sample Survey

Table II Occupational Background Wise Take On The Necessity Of Proper Waste Disposal

| Occupational Background | Types of Response | |
|-------------------------|-------------------|-------------------|
| | Necessary (%) | Not Necessary (%) |
| Service | 93 | 7 |
| Business | 92 | 8 |
| Students | 94 | 6 |
| Wage-Earners | 85 | 15 |
| Others | 89 | 11 |

Source: Sample Survey

Regarding the impact of unplanned waste disposal on the environment 92 percent of the respondents' hold the view that unplanned waste disposal impacts upon the environment. While 8 percent respondents hold the view that it does not impact upon the environment.

Polythenes are non-biodegradable and as such our environment suffers a serious threat from it. But because of peoples' ignorance about the issue, environmental deterioration from the use of polythene is gradually increasing. When the sample population was enquired on the harmful effects of polythene, a majority of the people (85 percent) recorded their awareness on the harmfulness of polythene.

Attitude towards household waste and its management

To gauge the attitude of the people of Mariani towards household waste and its management, the sample population was enquired about the views on banning of polythene and recycling of waste, and their initiative towards a reduction of the quantity of household waste.

Polythenes are one of the most common items comprising household waste in India. The bulk quantity of plastic, mainly polythene bags.... causes serious health hazard and environmental pollution [4]. Their non-biodegradable nature makes waste management a serious concern. For the success of any govt. policy, regarding the imposition of the ban upon polythene, it is necessary that the

people realize the urgency of the need. It is, however, a good sign that an overwhelming majority (89 percent) of the residents of Mariani feel that Polythenes are to be banned.

When asked about their views on recycling of waste, it was seen that 31 percent of the population of Mariani is in favor of recycling of household waste.

The survey also revealed that 67 percent of the residents of Mariani take steps for the reduction of household waste.

Prevalent practices of household waste disposal

To identify the prevalent practices of household waste disposal in Mariani town, the respondents were questioned on types of household waste disposed of, the quantity of the waste disposed of, methods of waste disposal practiced and the place of disposal.

In terms of the types of household waste disposed of, it was found that the residents of the town dispose of polythene, metals, glass, cloth, vegetable waste and some other items like paper, leather goods and food residue etc. Of these vegetable waste forms the highest percentage i.e., 46 percent, which is followed by polythene, metals, glass, clothes and other items (TABLE III).

Table III Types Of Household Waste Disposed

| Types of waste | Amount Disposed (%) |
|-----------------|---------------------|
| Polythene | 29 |
| Metal | 5 |
| Glass | 9 |
| Cloth | 4 |
| Vegetable Waste | 43 |
| Others | 10 |

Source: Sample Survey

To estimate the quantity of household waste disposed of in Mariani town, data was collected on the approximate amount of household waste that is disposed of by each of the respondent's. The total amount of household waste disposed of by the sample population is determined to be 107 kg and this is derived by summing up the individual data. Thereafter, this amount is multiplied by the total population of the town (i.e. 20,801) to estimate the quantity of daily household waste generated by the whole town. The estimated data, thus derived, is 2225.71 ton. Using this data, the monthly and the annual amount of household waste generation is estimated. The estimated amount of household waste generated per month is 66771.21 ton and per annum is 801254.52 ton.

The survey revealed the employment of three main methods for disposing of household waste in Mariani. They are throwing, burning and dumping. Amongst these methods throwing constitutes 45 percent of the waste disposed of, followed by dumping and burning (TABLE IV).

Table IV Methods Of Waste Disposed

| Method | People employing these methods (%) |
|----------|------------------------------------|
| Throwing | 45 |
| Burning | 32 |
| Dumping | 23 |

Source: Sample Survey

When these methods of waste disposal were analyzed based upon the educational and occupational background of the respondents some variations were noticed. Educational background wise it was seen that burning of waste is not done by the postgraduates (TABLE V). They seem to be concerned about the ill effects of burning household waste. However, throwing away of garbage remains the most used method irrespective of education level.

Table V Method Of Disposal (As Per Educational Background)

| Method Of Disposal | Educational-wise People Employing these Methods (%) | | | | |
|--------------------|---|-----------|-----------|----------|---------------|
| | Below 10th | 10th Pass | 12th Pass | Graduate | Post Graduate |
| Burn | 18 | 19 | 27 | 14 | 0 |
| Dump | 39 | 25 | 28 | 43 | 40 |
| Throw Away | 43 | 56 | 45 | 43 | 60 |

Source: Sample Survey

In the case of occupational background, no substantial variation is observed (TABLE VI).

Table VI Method Of Disposal (As Per Occupational Background)

| Method Of Disposal | Occupation-wise People Employing these Methods (%) | | | | |
|--------------------|--|----------|----------|--------------|--------|
| | Service | Business | Students | Wage Earners | Others |
| Burn | 25 | 23 | 15 | 12 | 29 |
| Dump | 31 | 36 | 39 | 45 | 29 |
| Throw Away | 44 | 41 | 46 | 43 | 42 |

Source: Sample Survey

When enquired about their usual areas of disposing household waste, majority of the respondents i.e. 55 percent said they dumped their household waste within their house compounds, followed by the practices of disposal along the roadside, other areas (like ponds, drains etc.), and in public dustbins. However, in the category of others, ponds are the most prominent dumping spots (TABLE VII). Here public, as well as private ponds are included.

Table V Usual Area of Disposing Household Waste With Amount

| Area of Disposal | Amount Disposed (%) |
|------------------|---------------------|
| Public Dustbins | 11 |
| Roadside | 16 |
| House Compound | 55 |
| Others | 18 |

Source: Sample Survey

Here, it is worth mentioning that the two major water bodies of the town, namely the Bhogdoi River that forms the eastern boundary of the town, and the twin ponds called “Jura Pukhuri” located in ward no.3, are being used by the locals to dump their waste on a regular basis.

Along the bank of the Bhogdoi River many families reside where their monthly incomes are below the poverty level. They also suffer from lack of basic amenities like sanitation facility. Thus, these people end up depending on the river for their various needs like bathing, washing, disposing of human excreta, disposing of garbage, discharging sewage..... [5].

VIII SUMMERY AND CONCLUSION

The present survey clearly indicates both positive as well as negative dimensions relating to the perception of the residents on household waste disposal in the study area.

Positive Dimensions

- Most of the residents of Mariani are aware of the necessity of proper waste disposal. They realize the fact that improper disposal of waste can cause damage to human health and environment.
- It is a positive sign that many of the residents of Mariani realize that polythene are hazardous and they consider banning of polythenes as a viable solution.
- The residents of Mariani although in small number, do go for recycling of waste and many residents of the town take steps for the reduction of their household waste. It is a commendable effort in this regard.

Negative Dimensions

- Loads of household waste lying on the roadside is a common sight in Mariani.
- Every possible place from roads to ponds has been turned into a dumping spot for the residents. Every day about 2225.71 tons of household waste is dumped in the town. 25 percent of the residents burn their household waste while disposing of. This gives rise to toxic gasses hampering human health and environment.

In conclusion, it can be said that the study undertaken at Mariani revealed many attention-grabbing facts relating to the perception of the residents on household waste

disposal. It helped in analyzing the present scenario of household waste disposal in the town. Since most of the residents are aware of the issue of household waste; a little endeavor in this regard can help in solving the problem of household waste in Mariani.

- Efforts are to be made by the govt. to spread the awareness among the people regarding cleanliness and protection of the environment,
- People should be educated to sort waste into biodegradable, recyclable, inert, composite and hazardous or toxic at the source before disposal. Any plan to control pollution can succeed only if the people feel initiated and involved in its working and are able to participate in its implementation [6].
- NGO's and other voluntary organizations should come forward to cultivate proper methods of waste disposal among the people.
- A master plan is to be made by the town committee to create alternative spots for garbage dumping.

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