RESEARCH ARTICLE

PRACTICES AND PERCEPTION OF RURAL HOUSEHOLDS ABOUT CATTLE WASTE DISPOSAL AND MANAGEMENT

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Abstract: This study was conducted in the village Gorakhera of panchayat samiti Bhadeshar in Chittoergarh district of Rajasthan to assess the type and quantity of household waste generated and its disposal pattern. Quantity of waste generated was reported in the form of headload. For animal waste, the head load contained cow dung about 10-12 kg/ basket. On an average, a family with 4-5 animals produced 2-3 number of such head loads and another head load of 4-5 kg on daily basis consisted of leftover of household/ animal /agro waste. The biodegradable household waste consisting of kitchen waste, ash, and paper, remainder of fodder by animals, urine and dung of animals were thrown in Ruddy. Under non biodegradable waste, poly bags were burnt for igniting the fire in the home. The metal and glass and plastic waste were sold to the vendors. The type and quantum of inorganic waste consisting of plastic, china ware, glassware, batteries, paints, pesticides, insecticides and their containers, left over medicines, varied according to landholdings, means of transportation and type of house. They were aware about the hazardous waste but were not aware about its proper management. Dung cakes were stored in bitoda - a rectangular structure with tapering at the top plastered by a mixture of dung and agro waste in a proportion of 9:1. During rainy season, there is no making of dung cakes; hence, all the animal waste is disposed of at Ruddy to be used as manure later on.

Keywords: Waste management, ATT (Agriculture Transfer Technology), Recyclable waste

INTRODUCTION

Waste can be defined as any material/ liquid that is left over after productive use or which is beyond any use in its current form and is generally discarded as unwanted material linked to human activity in comparison to nature which has its own system of recycling waste such that it eventually becomes a resource: for example, organic matter such as leaves, branches, and crop wastes are, decomposed to form manure. Waste management is the "generation, prevention, characterization, monitoring, treatment, handling, reuse and residual disposition of solid wastes" There are various types of solid waste including municipal (residential, institutional, commercial), agricultural, and special (health care, household hazardous wastes, sewage sludge etc.). The term usually relates to materials produced by human activity, and the process is generally undertaken to reduce their effect on health, the environment or aesthetics. Waste gets generated at the level of household, industries, hospital and agricultural farm. This has been classified as organic waste, toxic waste, recyclable waste and soiled waste (ceo.mse.ac.in/ kidssolid.asp). In agricultural sector substantial amount of agricultural and animal wastes are recycled to meet the needs of feed, fodder and fuel. The type, quality and quantity of waste generated in rural and urban areas are different and huge so waste management is recommended. Waste collection methods vary widely among different countries and regions. Domestic waste collection services are often provided by local government authorities, or by private companies for industrial and commercial waste. In some areas, especially villages, do not have any formal waste-collection system. In the light of above facts and importance of waste management the entire study was undertaken with following objectives:

1. To Study the type and quantity of household waste generated in rural areas.
2. To Determine the disposal pattern of household waste in rural areas.

METHODOLOGY

Present study was conducted in Ghorakhera village of Chittorgarh district in Rajasthan. Chittorgarh district was selected purposively for research. Chittorgarh district have been divited in 16 panchayat samities out of them one panchayat samiti i.e. Bhadeshar was selected purposively. Panchayat samiti Bhadesher having 164 villages out of these one village Ghorkheda was selected for research sample. This village was selected randomly due to the reason as the researchers are also working in this villege. In Ghorkhara village about 400 households are residing and engaged in farming and animal rearing. A list of of all households was prepared with the help of villagers. From the list, so prepared 60 households were selected using random sampling technique for the purpose of research sample. The data from the selected families were collected with the help of personal interview technique using interview schedule PRA technique was also used for observation and verification of responses provided

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by the respondents. The data were collected on various aspect viz., type, quantity of household waste, it's disposal pattern, and place and person involved for household waste disposal. Data so collected were analysied, tabulated and interpreted in the light of the objectives. Results of the study have been presented in the following text and tables.

CONCLUSION

Profile of the village:
Village Ghorakhera, a truly agrarian community consisting of < 400 number of households mainly dominated by Jat and inhabited by other communities like brahmin, naie, sunar, khati, kumhar and having a separate harijan basti at the periphery of the village. The village seems to be impacted by the proximity of urban influence in terms of availability of physical facilities viz., water supply, power supply, Pucca Street, connectivity with concrite or black road, government school is available for study up to 10th standard, 3 Aganwadi centres. No PHC is working in the village. It was observed that physical facilities have not affected the villagers positively for pursuance of girl's education at higher level than 10th standard due to prevailing socio-psychological issues of safety and security.

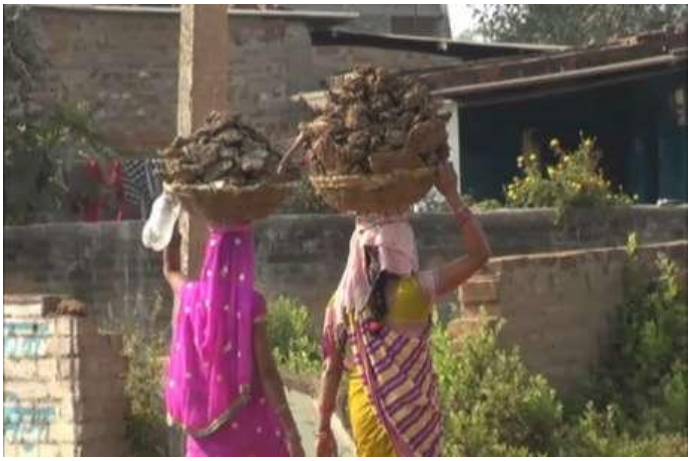
Type and quantity of waste at household level:
The different type of waste like household or residential waste, Animal waste, agro waste, commercial waste, sewage waste. biodegradable waste, consisting of kitchen waste and ash, paper, stationary and books, clothes, leftover fodder by animals, urine and dung of animals, was considered as non-hazardous and degedradable waste by the villagers. Whereas, non-biodegradable waste included plastic, polybags, glass and bone-china, metal, tin and containers. batteries, paints, pesticides, insecticide, leftover medicines were considered as non decomposable waste. The in-organic wastes were perceived as hazardous by the villagers but were not having habits for proper management practices. Quantity of waste generated was reported in the form of head load/ tasla. For animal waste, the quantity of head load contained dung was about 12-15 kg/ tasla. On an average, a family having 4-5 animals produced 23 number of such head loads and another head load of 5-7 kg consisted of household and agro waste was also produced. The quantity of waste generated is increasing in rural areas as a result of increased population, consumptions and commercial activities. It is estimated that 15,000 to 18,000 million liters of gray water and 0.3 to 0.4 million metric ton of solid waste generated per day in rural areas (DDWS-UNICEF, 2008). Kumari et.al. reportred that at household level vegetable peels were generated daily (WMS 4.00 and rank I), followed by polythene bags (WMS 2.61), old clothes (WMS 2.35), cut pieces (2.31), plastic bottles and containers (WMS 2.15), tin containers (WMS 1.89), paper and cardboard (WMS 1.10), with ranks II to X, respectively. Dhingra (2000) also documented the multiple nature of waste generated in rural households.

Disposal pattern of waste management: This section describes the data on waste disposal pattern, place and person involved in waste management. Ghorakhera is having broad and clean street roads with open drain for liquidand semi-solid wastes. At village level, waste disposal is mainly done at four locations, out of which two places are inside and another two places are located outside the village. The liquid/ semi solid waste disposal is to be done in the community pond runs through the drains from the household to streets and street to kaccha pond.different types of garbage in pond proximity is also dumped by the villagers specially those residing near the pond. It was also found in the study that the biodegradable household kitchen waste like peels of vegetable and fruits,Paper, straw or daily household garbage, ash and other litter were thrown to dispose in Ruddy by all the households. In the disposal pattern it was also reported thatmost of the women burnt polytheens' for igniting the fire in the home or even outside burning the waste instead of disposing properly. The metal, glass and plastic waste were reported to be sold to the vendors and with barter system buying crockery or household utility articles like sieve, mesh cover etc. or getting few bugs in return. Its was found that the households were not disposing of the pesticide/ insecticide containers in scientific manner. The left-over fodder, dung and urine of the animals was …??? by the women. The cow dung is to be used either to making upale (kind of fuel for cooking food) or directly dumping in the Ruddy for decomposing. During the investigation it was noted that In rainy season, women do not make the Uple (dung cakes). It was found that people store dung cakes in a structure called Bitoda, where dung cakes after arranging in rectangular style with tapering at the top plastered by the mix of dung and the agro waste in a proportion of 90:10 in volume. Few of the households were found to sale the bitoda structures to the bricks industry people for fuel purposes. Use of agro waste was reported mainly as dry fodder for the animals, fuel for brick making industry, leftover fodder was used for making of dung cakes or dumping in the Ruddy especially during rainy season. Burning of the agro waste in the field itself was also observed in the village. Kumari *etal*, 2007 reported that in rural households substantial amount of waste generated at household, farm and from animals gets reused in various forms depending on the nature of waste while the rural families besides practicing traditional methods of waste management are also adopting recommendations of scientists and government departments.

Place and person involved in waste disposal of households: Most of the degradable waste is dumped

at a particular place or final disposal point, called Ruddy area, mostly at the community land, at the periphery of the village. Dumping of waste at the final point is mainly done by female folk of the village. For purpose of decomposition the waste is kept here for about one year or more, then the same is spread in the fields and farms as farm yard manure (FYM) which is very useful for improving soil health and productivity. The transporting of FYM is mainly done by tractors or manually by head loads. The head loads are carried out to the fields mainly by females or farm women and for transport by tractor trolly loading and unloading is to be done by the male members mainly. However, some of the households were found to dump the waste in their own area near to the house and transportation and broadcasing in the fields was same as above. The above observations and results are in the line of Ashalakshmi and Arunachalam, (2010) who reported that the collection and removal of waste in the Panchayat was done manually and the work efficiency was very low 60 to 70 kg per person per week. The collection efficiency of the Panchayat was around 58.8 Percent. The main reasons for the low level of waste collection were inadequate capacity, the poor financial situation, of the Panchayat and lack of proper disposal site.

Observation based intervention plan for the village: The scientific intervention related to awareness, knowledge and skill about common resources for developmental and management is need of the villagers. Useful tools and techniques for waste management, Vermicomposting, garbage management, hygiene and sanitation and zero tillage, environmental education along with training on management of hazardous waste by the villagers specially the insecticide and pesticides containers is also requirement of the households. Spreading of the poly bags in and around the home, village and even in the Ruddy is also cause of concern need education to the villagers about plasting management. To resolve the problem of dumping of the Ruddy near the school and wells, waterbodies and residential areas needs educational interventions to the villagers at community level. The educational intervention requires a multiple methods, multi-disciplinary effoert with individuals, groups and community participatory approaches. Monitoring of proper disposal and management of waste is need to be done by existing institutions.



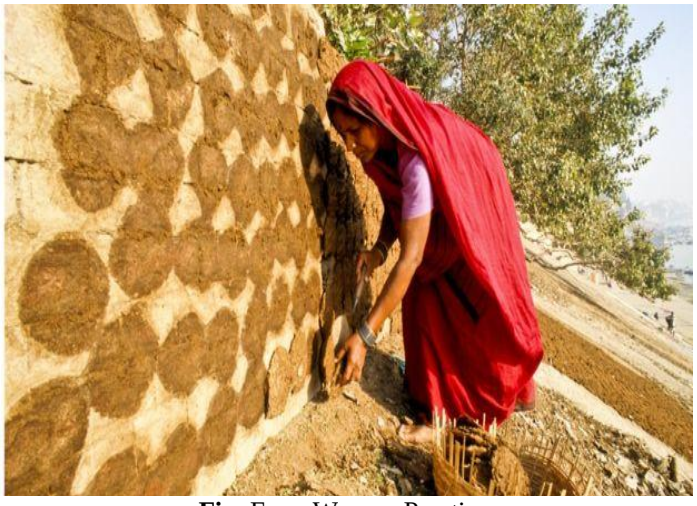


Fig. Farm Women Practice

Table 1. Type and quantum of waste at household level

Sr. No.	Type	Det Details	Quantum
Biodegradable waste			
1.	A)Kitchen waste and ash	Leftover food, peels and ash	1.0kg/day
	B)paper	Paper Cardboard, paper bags, newspaper, stationary and books	2-7 kg/annum
	C) Miscellaneous organic materials	Leaves, grass, remainder of agro waste, clothes	Varied according to family size, land, herd size
	D) Manure	Remainder of fodder by animals, urine and dung of animals	4-6 kg/day
Non-biodegradable waste			
2.	E) Plastic	Broken mugs, buckets, bottles.	½-2 kg/ annum
	F) Poly bags	Multi coloured poly bags	0.7 kg/ annum
	G) Glass and Bone china	Tumbler, Glass bottles, crockery	3-5 kg/annum
	H)Metal	Tin, containers	1-2 kg/ annum
	I) Hazardous-	waste Batteries, paints, pesticides, insecticide, left over medicines	Varied according to landholding and means of transportation and

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